D3Q27 NSE,
a supplementary material for
Lattice Boltzmann Method Analysis Tool (LBMAT)

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Contents

1 Global definitions

In $\mathbb{R}^3$, the position and velocity vectors are given by $\boldsymbol{x} = (x_1, x_2, x_3)^T$ and $\boldsymbol{v} = (v_1, v_2, v_3)^T$, respectively.

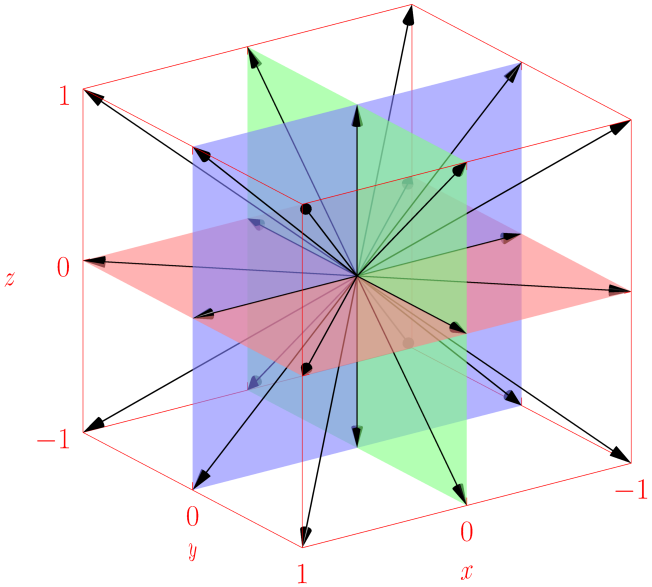
1.1 Discrete velocity vectors

Discrete velocity vectors and the lattice speed of sound are defined by

$$\{\boldsymbol{c}_i\}_{i=1}^{27} = \left(\begin{pmatrix}0\\0\\0\end{pmatrix}, \begin{pmatrix}1\\0\\0\end{pmatrix}, \begin{pmatrix}0\\1\\0\end{pmatrix}, \begin{pmatrix}0\\0\\1\end{pmatrix}, \begin{pmatrix}-1\\0\\0\end{pmatrix}, \begin{pmatrix}0\\-1\\0\end{pmatrix}, \begin{pmatrix}0\\0\\-1\end{pmatrix}, \begin{pmatrix}0\\1\\1\end{pmatrix}, \begin{pmatrix}0\\1\\-1\end{pmatrix}, \right.$$
$$\begin{pmatrix}0\\-1\\1\end{pmatrix}, \begin{pmatrix}0\\-1\\-1\end{pmatrix}, \begin{pmatrix}1\\1\\0\end{pmatrix}, \begin{pmatrix}1\\-1\\0\end{pmatrix}, \begin{pmatrix}-1\\1\\0\end{pmatrix}, \begin{pmatrix}-1\\-1\\0\end{pmatrix}, \begin{pmatrix}1\\0\\1\end{pmatrix}, \begin{pmatrix}1\\0\\-1\end{pmatrix}, \begin{pmatrix}-1\\0\\1\end{pmatrix},$$
$$\left. \begin{pmatrix}-1\\0\\-1\end{pmatrix}, \begin{pmatrix}1\\1\\1\end{pmatrix}, \begin{pmatrix}1\\1\\-1\end{pmatrix}, \begin{pmatrix}1\\-1\\1\end{pmatrix}, \begin{pmatrix}1\\-1\\-1\end{pmatrix}, \begin{pmatrix}-1\\1\\1\end{pmatrix}, \begin{pmatrix}-1\\1\\-1\end{pmatrix}, \begin{pmatrix}-1\\-1\\1\end{pmatrix}, \begin{pmatrix}-1\\-1\\-1\end{pmatrix} \right),$$

$$c_s = \frac{1}{\sqrt{3}},$$

respectively [1].



1.2 Raw and central moments

The raw and central moments are defined by

$$m_{\boldsymbol{\alpha}} := \sum_{i=1}^{27} f_i \boldsymbol{c}_i^{\boldsymbol{\alpha}},$$

and

$$k_{\boldsymbol{\alpha}} := \sum_{i=1}^{27} f_i (\boldsymbol{c}_i - \boldsymbol{v})^{\boldsymbol{\alpha}},$$

respectively, where $\boldsymbol{\alpha} = (\alpha_1, \alpha_2, \alpha_3) \in \mathbb{Z}^3$ denotes a multi-index (as a row vector) and $\boldsymbol{c}_i^{\boldsymbol{\alpha}} := \prod_{j=1}^{3} [\boldsymbol{c}_i]_j^{\alpha_j}$.

1.3 Transformation matrix M

Matrix $\mathbf{M}$, that defines macroscopic quantities (moments) $\boldsymbol{\mu}$ by

$$\boldsymbol{\mu} = \mathbf{M}\boldsymbol{f},$$

with $\boldsymbol{f} = (f_1, f_2, \ldots, f_{27})^T$, is selected such that

$$\begin{aligned}\boldsymbol{\mu} = \Big(& m_{(0,0,0)}, m_{(1,0,0)}, m_{(0,1,0)}, m_{(0,0,1)}, m_{(1,1,0)}, m_{(1,0,1)}, m_{(0,1,1)}, m_{(1,1,1)}, m_{(2,0,0)}, \\ & m_{(0,2,0)}, m_{(0,0,2)}, m_{(2,1,0)}, m_{(2,0,1)}, m_{(2,1,1)}, m_{(1,2,0)}, m_{(0,2,1)}, m_{(1,2,1)}, m_{(1,0,2)}, \\ & m_{(0,1,2)}, m_{(1,1,2)}, m_{(2,2,0)}, m_{(2,0,2)}, m_{(0,2,2)}, m_{(2,2,1)}, m_{(2,1,2)}, m_{(1,2,2)}, m_{(2,2,2)} \Big)^T,\end{aligned}$$

i.e., $\mathbf{M}$ is given by

$$
\mathbf{M} = \begin{pmatrix}
1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
0 & 1 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & 1 & -1 & -1 & 1 & 1 & 1 & 1 & -1 & -1 & -1 & -1 \\
0 & 0 & 1 & 0 & 0 & -1 & 0 & 1 & 1 & -1 & -1 & 1 & -1 & 1 & -1 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & 1 & -1 & -1 \\
0 & 0 & 0 & 1 & 0 & 0 & -1 & 1 & -1 & 1 & -1 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & -1 & -1 & 1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & 1 & -1 & 1 & -1 & -1 & 1 & -1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & 1 & -1 & -1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & -1 & 1 & 1 & -1 \\
0 & 1 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
0 & 0 & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
0 & 0 & 0 & 1 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & 1 & -1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & 1 & -1 & -1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & -1 & -1 & -1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & -1 & 1 & -1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & 1 & 1 & 1 & -1 & -1 & -1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & 1 & -1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & -1 & -1 & 1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & 1 & -1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & -1 & -1 & -1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1
\end{pmatrix}.
$$

1.4 Equilibrium

The corresponding equilibrium raw moments are defined using the continuous Maxwell–Boltzmann distribution function [1]

$$
f^{(eq)}(\boldsymbol{\xi}) = \frac{\rho}{(2\pi c_s^2)^{\frac{3}{2}}} \exp\left(-\frac{||\boldsymbol{\xi} - \boldsymbol{v}||^2}{2c_s^2}\right)
$$

as

$$
m_{\boldsymbol{\alpha}}^{(eq)} = \int\limits_{\mathbb{R}^3} \boldsymbol{\xi}^{\boldsymbol{\alpha}} f^{(eq)}(\boldsymbol{\xi}) \mathrm{d}\boldsymbol{\xi},
$$

where $\alpha_i \in \{0,1,2\}$, $i=1,2,3$. Hence, the equilibrium moments $\boldsymbol{\mu}^{(eq)}$ satisfy

$$\boldsymbol{\mu}^{(eq)} = \begin{pmatrix} \rho \\ \rho v_1 \\ \rho v_2 \\ \rho v_3 \\ \rho v_1 v_2 \\ \rho v_1 v_3 \\ \rho v_2 v_3 \\ \rho v_1 v_2 v_3 \\ \rho\left(v_1^2 + c_s^2\right) \\ \rho\left(v_2^2 + c_s^2\right) \\ \rho\left(v_3^2 + c_s^2\right) \\ \rho\left(v_1^2 v_2 + v_2 c_s^2\right) \\ \rho\left(v_1^2 v_3 + v_3 c_s^2\right) \\ \rho\left(v_1^2 v_2 v_3 + v_2 v_3 c_s^2\right) \\ \rho\left(v_1 v_2^2 + v_1 c_s^2\right) \\ \rho\left(v_2^2 v_3 + v_3 c_s^2\right) \\ \rho\left(v_1 v_2^2 v_3 + v_1 v_3 c_s^2\right) \\ \rho\left(v_1 v_3^2 + v_1 c_s^2\right) \\ \rho\left(v_2 v_3^2 + v_2 c_s^2\right) \\ \rho\left(v_1 v_2 v_3^2 + v_1 v_2 c_s^2\right) \\ \rho\left(v_1^2 v_2^2 + v_2^2 c_s^2 + v_1^2 c_s^2 + c_s^4\right) \\ \rho\left(v_1^2 v_3^2 + v_3^2 c_s^2 + v_1^2 c_s^2 + c_s^4\right) \\ \rho\left(v_2^2 v_3^2 + v_3^2 c_s^2 + v_2^2 c_s^2 + c_s^4\right) \\ \rho\left(v_1^2 v_2^2 v_3 + v_2^2 v_3 c_s^2 + v_1^2 v_3 c_s^2 + v_3 c_s^4\right) \\ \rho\left(v_1^2 v_2 v_3^2 + v_2 v_3^2 c_s^2 + v_1^2 v_2 c_s^2 + v_2 c_s^4\right) \\ \rho\left(v_1 v_2^2 v_3^2 + v_1 v_3^2 c_s^2 + v_1 v_2^2 c_s^2 + v_1 c_s^4\right) \\ \rho\left(v_1^2 v_2^2 v_3^2 + v_2^2 v_3^2 c_s^2 + v_1^2 v_3^2 c_s^2 + v_3^2 c_s^4 + v_1^2 v_2^2 c_s^2 + v_2^2 c_s^4 + v_1^2 c_s^4 + c_s^6\right) \end{pmatrix}.$$

2 Spatial EPDEs

2.1 SRT

2.1.1 Definitions

Collision operator $\boldsymbol{C}$:

$$\boldsymbol{C}\left(\boldsymbol{f}\right) = \omega\left(\mathbf{M}^{-1}\boldsymbol{\mu}^{(eq)} - \boldsymbol{f}\right),$$

$\omega \in (0,2)$.

2.1.2 Conservation of mass: ρ

$$\frac{\partial \rho}{\partial t} + \frac{\delta_l v_1}{\delta_t}\frac{\partial \rho}{\partial x_1} + \frac{\delta_l \rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l v_2}{\delta_t}\frac{\partial \rho}{\partial x_2} + \frac{\delta_l \rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\delta_l v_3}{\delta_t}\frac{\partial \rho}{\partial x_3} + \frac{\delta_l \rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + \left(-1 + v_1^2 + 3c_s^2\right)\frac{\delta_l^3 v_1}{12\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} +$$
$$\left(-1 + 3v_1^2 + c_s^2\right)\frac{\delta_l^3 \rho}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{\delta_l^3 \rho c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2 \partial x_2} - \frac{\delta_l^3 \rho c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1 \partial x_2^2} + \left(-1 + 3c_s^2 + v_2^2\right)\frac{\delta_l^3 v_2}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + \left(-1 + c_s^2 + 3v_2^2\right)\frac{\delta_l^3 \rho}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} -$$
$$\frac{\delta_l^3 \rho c_s^2}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2 \partial x_3} - \frac{\delta_l^3 \rho c_s^2}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2 \partial x_3} - \frac{\delta_l^3 \rho c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1 \partial x_3^2} - \frac{\delta_l^3 \rho c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2 \partial x_3^2} + \left(-1 + 3c_s^2 + v_3^2\right)\frac{\delta_l^3 v_3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + \left(-1 + c_s^2 + 3v_3^2\right)\frac{\delta_l^3 \rho}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}$$
$$+ \left(-6v_1^2 - 12\omega v_1^2 c_s^2 - 2c_s^2 + 3\omega v_1^2 + \omega c_s^2 - 3\omega v_1^4 - \omega c_s^4 + 6v_1^4 + 24v_1^2 c_s^2 + 2c_s^4\right)\frac{\delta_l^4}{24\omega\delta_t}\frac{\partial^4 \rho}{\partial x_1^4} +$$
$$\left(-4 + 10v_1^2 + 6c_s^2 + 2\omega - 5\omega v_1^2 - 3\omega c_s^2\right)\frac{\delta_l^4 \rho v_1}{12\omega\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + \left(2 - 2v_1^2 - 6c_s^2 - \omega + \omega v_1^2 + 3\omega c_s^2\right)\frac{\delta_l^4 \rho v_1}{12\omega\delta_t}\frac{\partial^4 v_2}{\partial x_1^3 \partial x_2} +$$

$$(-2+\omega)\frac{\delta_l^4 c_s^4}{6\omega\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + (2-6c_s^2-\omega+3\omega c_s^2+\omega v_2^2-2v_2^2)\frac{\delta_l^4\rho v_2}{12\omega\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$(-2c_s^2+6v_2^4+24v_2^2c_s^2+\omega c_s^2-3\omega v_2^4+3\omega v_2^2-\omega c_s^4-12\omega v_2^2c_s^2-6v_2^2+2c_s^4)\frac{\delta_l^4}{24\omega\delta_t}\frac{\partial^4\rho}{\partial x_2^4} +$$
$$(-4+6c_s^2+2\omega-3\omega c_s^2-5\omega v_2^2+10v_2^2)\frac{\delta_l^4\rho v_2}{12\omega\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + (2-2v_1^2-6c_s^2-\omega+\omega v_1^2+3\omega c_s^2)\frac{\delta_l^4\rho v_1}{12\omega\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$(2-6c_s^2-\omega+3\omega c_s^2+\omega v_2^2-2v_2^2)\frac{\delta_l^4\rho v_2}{12\omega\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + (-2+\omega)\frac{\delta_l^4 c_s^4}{6\omega\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + (-2+\omega)\frac{\delta_l^4 c_s^4}{6\omega\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} +$$
$$(2-6c_s^2-\omega+3\omega c_s^2+\omega v_3^2-2v_3^2)\frac{\delta_l^4\rho v_3}{12\omega\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + (2-6c_s^2-\omega+3\omega c_s^2+\omega v_3^2-2v_3^2)\frac{\delta_l^4\rho v_3}{12\omega\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$(6v_3^4-2c_s^2-3\omega v_3^4+\omega c_s^2+24v_3^2c_s^2+3\omega v_3^2-12\omega v_3^2c_s^2-\omega c_s^4-6v_3^2+2c_s^4)\frac{\delta_l^4}{24\omega\delta_t}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$(-4+6c_s^2+2\omega-3\omega c_s^2-5\omega v_3^2+10v_3^2)\frac{\delta_l^4\rho v_3}{12\omega\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0.$$

2.1.3 Conservation of momentum: ρv_1

$$v_1\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (v_1^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{2\delta_l\rho v_1}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l v_1 v_2}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{\delta_l\rho v_2}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{\delta_l\rho v_1}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\delta_l v_1 v_3}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{\delta_l\rho v_3}{\delta_t}\frac{\partial v_1}{\partial x_3} +$$
$$\frac{\delta_l\rho v_1}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+6v_1^2+4c_s^2+\omega-3\omega v_1^2-2\omega c_s^2)\frac{\delta_l^2}{\omega\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + (2-\omega)\frac{3\delta_l^2\rho v_1}{\omega\delta_t}\left(\frac{\partial v_1}{\partial x_1}\right)^2 + (-2+\omega)\frac{\delta_l^2 c_s^2}{2\omega\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} +$$
$$(-2+\omega)\frac{\delta_l^2 c_s^2}{2\omega\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + (-2+\omega)\frac{\delta_l^2 c_s^2}{2\omega\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2+\omega)\frac{\delta_l^2 c_s^2}{2\omega\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} +$$
$$(-2+2v_1^2+6c_s^2+\omega-\omega v_1^2-3\omega c_s^2)\frac{\delta_l^2 v_1}{2\omega\delta_t}\frac{\partial^2\rho}{\partial x_1^2} + (-2+6v_1^2+2c_s^2+\omega-3\omega v_1^2-\omega c_s^2)\frac{\delta_l^2\rho}{2\omega\delta_t}\frac{\partial^2 v_1}{\partial x_1^2} +$$
$$(-2+\omega)\frac{\delta_l^2\rho c_s^2}{2\omega\delta_t}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2+\omega)\frac{\delta_l^2\rho c_s^2}{2\omega\delta_t}\frac{\partial^2 v_1}{\partial x_2^2} + (-2+\omega)\frac{\delta_l^2\rho c_s^2}{2\omega\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2+\omega)\frac{\delta_l^2\rho c_s^2}{2\omega\delta_t}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\omega^2\delta_t}\frac{\partial^3\rho}{\partial x_1^3} +$$
$$(-24+60v_1^2+36c_s^2+24\omega-60\omega v_1^2-36\omega c_s^2+5\omega^2c_s^2+11\omega^2v_1^2-4\omega^2)\frac{\delta_l^3\rho v_1}{6\omega^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} +$$
$$(12-12v_1^2-36c_s^2-12\omega+12\omega v_1^2+36\omega c_s^2-11\omega^2c_s^2-3\omega^2v_1^2+3\omega^2)\frac{\delta_l^3\rho v_1}{12\omega^2\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$(-12+12\omega-\omega^2)\frac{\delta_l^3 c_s^4}{6\omega^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} - \frac{\delta_l^3\rho v_1 c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+3c_s^2+v_2^2)\frac{\delta_l^3 v_1 v_2}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} +$$
$$(6-18c_s^2-6\omega-\omega^2v_2^2+18\omega c_s^2-3\omega^2c_s^2+6\omega v_2^2+\omega^2-6v_2^2)\frac{\delta_l^3\rho v_2}{6\omega^2\delta_t}\frac{\partial^3 v_1}{\partial x_2^3} + (-1+c_s^2+3v_2^2)\frac{\delta_l^3\rho v_1}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} +$$
$$(12-12v_1^2-36c_s^2-12\omega+12\omega v_1^2+36\omega c_s^2-11\omega^2c_s^2-3\omega^2v_1^2+3\omega^2)\frac{\delta_l^3\rho v_1}{12\omega^2\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{\delta_l^3\rho v_1 c_s^2}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} +$$
$$(-12+12\omega-\omega^2)\frac{\delta_l^3 c_s^4}{6\omega^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} - \frac{\delta_l^3\rho v_1 c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{\delta_l^3\rho v_1 c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+3c_s^2+v_3^2)\frac{\delta_l^3 v_1 v_3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} +$$
$$(6-18c_s^2-6\omega+18\omega c_s^2-\omega^2v_3^2+6\omega v_3^2-3\omega^2c_s^2+\omega^2-6v_3^2)\frac{\delta_l^3\rho v_3}{6\omega^2\delta_t}\frac{\partial^3 v_1}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{\delta_l^3\rho v_1}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$C_2\frac{\delta_l^4 v_1}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C_3\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_4\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_5\frac{\delta_l^4 v_1 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} +$$
$$(-24+72v_1^2+12c_s^2+36\omega-108\omega v_1^2-18\omega c_s^2+8\omega^2c_s^2+36\omega^2v_1^2-12\omega^2-\omega^3c_s^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_6\frac{\delta_l^4 v_2 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3}$$
$$+ (2-6c_s^2-\omega+3\omega c_s^2+\omega v_2^2-2v_2^2)\frac{\delta_l^4\rho v_1 v_2}{12\omega\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$(-12+18\omega+18\omega^2v_2^2+2\omega^2c_s^2-54\omega v_2^2-6\omega^2-\omega^3c_s^2+36v_2^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} +$$
$$(-2c_s^2+6v_2^4+24v_2^2c_s^2+\omega c_s^2-3\omega v_2^4+3\omega v_2^2-\omega c_s^4-12\omega v_2^2c_s^2-6v_2^2+2c_s^4)\frac{\delta_l^4 v_1}{24\omega\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C_7\frac{\delta_l^4\rho}{24\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_2^4} +$$
$$(-4+6c_s^2+2\omega-3\omega c_s^2-5\omega v_2^2+10v_2^2)\frac{\delta_l^4\rho v_1 v_2}{12\omega\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C_8\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$(-36+54\omega-\omega^3-16\omega^2)\frac{\delta_l^4\rho c_s^4}{12\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + (2-6c_s^2-\omega+3\omega c_s^2+\omega v_2^2-2v_2^2)\frac{\delta_l^4\rho v_1 v_2}{12\omega\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_9\frac{\delta_l^4 v_1 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} +$$
$$(-24+72v_1^2+12c_s^2+36\omega-108\omega v_1^2-18\omega c_s^2+8\omega^2c_s^2+36\omega^2v_1^2-12\omega^2-\omega^3c_s^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{10}\frac{\delta_l^4}{2\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2}$$
$$+ C_{11}\frac{\delta_l^4\rho}{2\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{12}\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{13}\frac{\delta_l^4\rho v_3}{\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{14}\frac{\delta_l^4}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{15}\frac{\delta_l^4\rho}{4\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} +$$
$$C_{16}\frac{\delta_l^4\rho v_2}{2\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{17}\frac{\delta_l^4\rho}{4\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{18}\frac{\delta_l^4 v_3 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + (2-6c_s^2-\omega+3\omega c_s^2+\omega v_3^2-2v_3^2)\frac{\delta_l^4\rho v_1 v_3}{12\omega\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} +$$
$$(-12+18\omega+18\omega^2v_3^2-54\omega v_3^2+2\omega^2c_s^2-6\omega^2+36v_3^2-\omega^3c_s^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$(2-6c_s^2-\omega+3\omega c_s^2+\omega v_3^2-2v_3^2)\frac{\delta_l^4\rho v_1 v_3}{12\omega\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$

$$(6v_3^4 - 2c_s^2 - 3\omega v_3^4 + \omega c_s^2 + 24v_3^2c_s^2 + 3\omega v_3^2 - 12\omega v_3^2c_s^2 - \omega c_s^4 - 6v_3^2 + 2c_s^4)\frac{\delta_l^4 v_1}{24\omega\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{19}\frac{\delta_l^4\rho}{24\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_3^4} + (-4 + 6c_s^2 + 2\omega - 3\omega c_s^2 - 5\omega v_3^2 + 10v_3^2)\frac{\delta_l^4\rho v_1 v_3}{12\omega\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

$$C_1 = -36v_1^2 - 144\omega v_1^2c_s^2 - 12c_s^2 + 36\omega v_1^2 + \omega^2c_s^4 + 12\omega c_s^2 + 7\omega^2v_1^4 - \omega^2c_s^2 - 36\omega v_1^4 - 7\omega^2v_1^2 - 12\omega c_s^4 + 24\omega^2v_1^2c_s^2 + 36v_1^4 + 144v_1^2c_s^2 + 12c_s^4$$

$$C_2 = 12 - 156v_1^2 - 5\omega^3c_s^4 - 1008\omega v_1^2c_s^2 - 132c_s^2 - 18\omega - 9\omega^3v_1^4 + 234\omega v_1^2 + 82\omega^2c_s^4 + 198\omega c_s^2 - 34\omega^3v_1^2c_s^2 + 90\omega^2v_1^4 - 78\omega^2c_s^2 - \omega^3 - 216\omega v_1^4 - 98\omega^2v_1^2 - 216\omega c_s^4 + 8\omega^2 + 404\omega^2v_1^2c_s^2 + 144v_1^4 + 6\omega^3c_s^2 + 672v_1^2c_s^2 + 144c_s^4 + 10\omega^3v_1^2$$

$$C_3 = 12 - 252v_1^2 - \omega^3c_s^4 - 648\omega v_1^2c_s^2 - 36c_s^2 - 18\omega - 29\omega^3v_1^4 + 378\omega v_1^2 + 14\omega^2c_s^4 + 54\omega c_s^2 - 18\omega^3v_1^2c_s^2 + 310\omega^2v_1^4 - 22\omega^2c_s^2 - \omega^3 - 756\omega v_1^4 - 154\omega^2v_1^2 - 36\omega c_s^4 + 8\omega^2 + 252\omega^2v_1^2c_s^2 + 504v_1^4 + 2\omega^3c_s^2 + 432v_1^2c_s^2 + 24c_s^4 + 14\omega^3v_1^2$$

$$C_4 = 36v_1^2 - \omega^3c_s^4 + 54\omega v_1^2c_s^2 - 24c_s^2 + 4\omega^3v_1^4 - 54\omega v_1^2 + 20\omega^2c_s^4 + 36\omega c_s^2 + 12\omega^3v_1^2c_s^2 - 26\omega^2v_1^4 - 12\omega^2c_s^2 + 54\omega v_1^4 + 26\omega^2v_1^2 - 54\omega c_s^4 - 42\omega^2v_1^2c_s^2 - 36v_1^4 - 36v_1^2c_s^2 + 36c_s^4 - 4\omega^3v_1^2$$

$$C_5 = 24 - 24v_1^2 - 72c_s^2 - 36\omega + 36\omega v_1^2 + 108\omega c_s^2 - 46\omega^2c_s^2 - \omega^3 - 14\omega^2v_1^2 + 14\omega^2 + 5\omega^3c_s^2 + \omega^3v_1^2$$

$$C_6 = 24 + \omega^3v_2^2 - 72c_s^2 - 36\omega - 14\omega^2v_2^2 + 108\omega c_s^2 - 42\omega^2c_s^2 - \omega^3 + 36\omega v_2^2 + 14\omega^2 + 3\omega^3c_s^2 - 24v_2^2$$

$$C_7 = -3\omega^3c_s^4 - 84\omega^2v_2^2c_s^2 - 3\omega^3v_2^2 - 24c_s^2 - 72v_2^4 - 144v_2^2c_s^2 + 42\omega^2v_2^2 + 30\omega^2c_s^4 + 36\omega c_s^2 + 108\omega v_2^4 - 14\omega^2c_s^2 - 42\omega^2v_2^4 - 108\omega v_2^2 - 72\omega c_s^4 + 6\omega^3v_2^2c_s^2 + 216\omega v_2^2c_s^2 + 3\omega^3v_2^4 + \omega^3c_s^2 + 72v_2^2 + 48c_s^4$$

$$C_8 = 36v_1^2 - \omega^3c_s^4 + 54\omega v_1^2c_s^2 - 24c_s^2 + 4\omega^3v_1^4 - 54\omega v_1^2 + 20\omega^2c_s^4 + 36\omega c_s^2 + 12\omega^3v_1^2c_s^2 - 26\omega^2v_1^4 - 12\omega^2c_s^2 + 54\omega v_1^4 + 26\omega^2v_1^2 - 54\omega c_s^4 - 42\omega^2v_1^2c_s^2 - 36v_1^4 - 36v_1^2c_s^2 + 36c_s^4 - 4\omega^3v_1^2$$

$$C_9 = 24 - 24v_1^2 - 72c_s^2 - 36\omega + 36\omega v_1^2 + 108\omega c_s^2 - 46\omega^2c_s^2 - \omega^3 - 14\omega^2v_1^2 + 14\omega^2 + 5\omega^3c_s^2 + \omega^3v_1^2$$

$$C_{10} = -36\omega v_2v_3^2c_s^2 + \omega^3v_1v_2^2c_s^2 - 24v_1v_2^2c_s^2 + 36\omega v_1v_2^2v_3^2 + 24v_1^2v_2c_s^2 - 14\omega^2v_1v_3^2c_s^2 - \omega^3v_1^2v_2c_s^2 - 36\omega v_1^2v_2v_3^2 + 14\omega^2v_1^2v_2c_s^2 - 24v_1v_3^2c_s^2 + \omega^3v_1v_3^2c_s^2 - 14\omega^2v_1v_2^2c_s^2 - 14\omega^2v_1v_2^2v_3^2 + 14\omega^2v_2v_3^2c_s^2 + 14\omega^2v_1^2v_2v_3^2 + 36\omega v_1v_3^2c_s^2 + 24v_1^2v_2v_3^2 - \omega^3v_1^2v_2v_3^2 - 36\omega v_1^2v_2c_s^2 + \omega^3v_1v_2^2v_3^2 - 24v_1v_2^2v_3^2 - \omega^3v_2v_3^2c_s^2 + 36\omega v_1v_2^2c_s^2 + 24v_2v_3^2c_s^2$$

$$C_{11} = -2\omega^3v_1v_2v_3^2 + 48v_1v_2v_3^2 - 14\omega^2v_2^2c_s^2 - 72\omega v_1v_2c_s^2 + 36\omega v_2^2v_3^2 - 24v_2^2c_s^2 - 14\omega^2v_3^2c_s^2 + \omega^3v_2^2v_3^2 + 28\omega^2v_1v_2v_3^2 - 24v_3^2c_s^2 + 36\omega v_3^2c_s^2 + 28\omega^2v_1v_2c_s^2 + \omega^3v_2^2c_s^2 + 36\omega v_2^2c_s^2 - 24v_2^2v_3^2 - 2\omega^3v_1v_2c_s^2 + 48v_1v_2c_s^2 - 14\omega^2v_2^2v_3^2 + \omega^3v_3^2c_s^2 - 72\omega v_1v_2v_3^2$$

$$C_{12} = 12\omega^3v_1v_2v_3^2 + 144v_1^2v_3^2 - \omega^3c_s^4 - 288v_1v_2v_3^2 + 432\omega v_1v_2c_s^2 - 216\omega v_1^2c_s^2 + 84\omega^2v_1^2v_3^2 + 84\omega^2v_3^2c_s^2 - 16\omega^2c_s^4 - 6\omega^3v_1^2c_s^2 - 168\omega^2v_1v_2v_3^2 + 144v_3^2c_s^2 - 6\omega^3v_1^2v_3^2 - 216\omega v_3^2c_s^2 - 168\omega^2v_1v_2c_s^2 + 54\omega c_s^4 + 84\omega^2v_1^2c_s^2 + 12\omega^3v_1v_2c_s^2 + 144v_1^2c_s^2 - 288v_1v_2c_s^2 - 6\omega^3v_3^2c_s^2 - 36c_s^4 + 432\omega v_1v_2v_3^2 - 216\omega v_1^2v_3^2$$

$$C_{13} = -24v_1c_s^2 - 36\omega v_2c_s^2 - 14\omega^2v_1c_s^2 + 36\omega v_1v_2^2 + \omega^3v_1v_2^2 + 24v_1^2v_2 - \omega^3v_2c_s^2 + 14\omega^2v_1^2v_2 + \omega^3v_1c_s^2 - 36\omega v_1^2v_2 - 24v_1v_2^2 - \omega^3v_1^2v_2 + 24v_2c_s^2 + 14\omega^2v_2c_s^2 - 14\omega^2v_1v_2^2 + 36\omega v_1c_s^2$$

$$C_{14} = -3\omega^3v_1v_2^2c_s^2 - 42\omega^2v_1^2v_3c_s^2 + 72v_1v_2^2c_s^2 - 108\omega v_1v_2^2v_3^2 + 42\omega^2v_1v_3^2c_s^2 + 108\omega v_2^2v_3c_s^2 - 42\omega^2v_1^2v_2^2v_3 + 72v_1v_3^2c_s^2 - 3\omega^3v_1v_3^2c_s^2 + 2\omega^3v_1c_s^4 - 72v_1^2v_2^2v_3 + 3\omega^3v_1^2v_2^2v_3 + 3\omega^3v_1^2v_3c_s^2 - 72v_1^2v_3c_s^2 + 42\omega^2v_1v_2^2c_s^2 + 42\omega^2v_1v_2^2v_3^2 + 108\omega v_1^2v_3c_s^2 + 108\omega v_1^2v_2^2v_3 - 42\omega^2v_2^2v_3c_s^2 - 108\omega v_1v_3^2c_s^2 - 72v_2^2v_3c_s^2 + 3\omega^3v_2^2v_3c_s^2 - 3\omega^3v_1v_2^2v_3^2 - 4\omega^2v_1c_s^4 + 72v_1v_2^2v_3^2 - 108\omega v_1v_2^2c_s^2$$

$$C_{15} = 14\omega^2v_2^2c_s^2 - 36\omega v_2^2v_3^2 + 24v_2^2c_s^2 + 14\omega^2v_3^2c_s^2 - 4\omega^2c_s^4 - \omega^3v_2^2v_3^2 + 72\omega v_1v_3c_s^2 + 72\omega v_1v_2^2v_3 + 24v_3^2c_s^2 - 36\omega v_3^2c_s^2 + 2\omega^3v_1v_2^2v_3 - 48v_1v_2^2v_3 - 48v_1v_3c_s^2 + 2\omega^3v_1v_3c_s^2 + 12\omega c_s^4 - \omega^3v_2^2c_s^2 - 36\omega v_2^2c_s^2 - 28\omega^2v_1v_3c_s^2 + 24v_2^2v_3^2 + 14\omega^2v_2^2v_3^2 - \omega^3v_3^2c_s^2 - 8c_s^4 - 28\omega^2v_1v_2^2v_3$$

$$C_{16} = 24v_1c_s^2 + \omega^3v_3c_s^2 - 36\omega v_1v_3^2 + 14\omega^2v_1c_s^2 - 14\omega^2v_1^2v_3 - \omega^3v_1v_3^2 + 36\omega v_3c_s^2 - 24v_1^2v_3 - \omega^3v_1c_s^2 + 36\omega v_1^2v_3 - 24v_3c_s^2 - 14\omega^2v_3c_s^2 + 14\omega^2v_1v_3^2 + 24v_1v_3^2 + \omega^3v_1^2v_3 - 36\omega v_1c_s^2$$

$$C_{17} = -14\omega^2v_2^2c_s^2 - 14\omega^2v_1^2v_2^2 + 36\omega v_1^2c_s^2 - 24v_1^2v_2^2 - 24v_2^2c_s^2 - 72\omega v_1v_3c_s^2 - 72\omega v_1v_2^2v_3 + \omega^3v_1^2c_s^2 - 2\omega^3v_1v_2^2v_3 + 48v_1v_2^2v_3 + \omega^3v_1^2v_2^2 + 48v_1v_3c_s^2 - 2\omega^3v_1v_3c_s^2 + \omega^3v_2^2c_s^2 + 36\omega v_2^2c_s^2 + 28\omega^2v_1v_3c_s^2 - 14\omega^2v_1^2c_s^2 + 36\omega v_1^2v_2^2 - 24v_1^2c_s^2 + 28\omega^2v_1v_2^2v_3$$

$$C_{18} = 24 - 72c_s^2 - 36\omega + \omega^3v_3^2 + 108\omega c_s^2 - 14\omega^2v_3^2 + 36\omega v_3^2 - 42\omega^2c_s^2 - \omega^3 + 14\omega^2 - 24v_3^2 + 3\omega^3c_s^2$$

$$C_{19} = -3\omega^3c_s^4 - 72v_3^4 - 24c_s^2 - 3\omega^3v_3^2 - 84\omega^2v_3^2c_s^2 + 108\omega v_3^4 + 30\omega^2c_s^4 + 36\omega c_s^2 + 42\omega^2v_3^2 - 144v_3^2c_s^2 - 108\omega v_3^2 - 14\omega^2c_s^2 + 216\omega v_3^2c_s^2 - 72\omega c_s^4 - 42\omega^2v_3^4 + 72v_3^2 + \omega^3c_s^2 + 3\omega^3v_3^4 + 6\omega^3v_3^2c_s^2 + 48c_s^4$$

2.1.4 Conservation of momentum: ρv_2

$$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{\delta_l v_1 v_2}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\delta_l\rho v_2}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l\rho v_1}{\delta_t}\frac{\partial v_2}{\partial x_1} + (c_s^2 + v_2^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2\delta_l\rho v_2}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\delta_l v_2 v_3}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{\delta_l\rho v_3}{\delta_t}\frac{\partial v_2}{\partial x_3} + \frac{\delta_l\rho v_2}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega)\frac{\delta_l^2c_s^2}{2\omega\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (-2+\omega)\frac{\delta_l^2c_s^2}{2\omega\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} + (-2 + 4c_s^2 + \omega - 2\omega c_s^2 - 3\omega v_2^2 + 6v_2^2)\frac{\delta_l^2}{\omega\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} +$$

$$
\begin{aligned}
&(2-\omega)\frac{3\delta_l^2\rho v_2}{\omega\delta_t}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-2+\omega)\frac{\delta_l^2 c_s^2}{2\omega\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} + (-2+\omega)\frac{\delta_l^2 c_s^2}{2\omega\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega)\frac{\delta_l^2\rho c_s^2}{2\omega\delta_t}\frac{\partial^2 v_2}{\partial x_1^2} + \\
&(-2+\omega)\frac{\delta_l^2\rho c_s^2}{2\omega\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_2} + (-2+6c_s^2+\omega-3\omega c_s^2-\omega v_2^2+2v_2^2)\frac{\delta_l^2 v_2}{2\omega\delta_t}\frac{\partial^2\rho}{\partial x_2^2} + (-2+2c_s^2+\omega-\omega c_s^2-3\omega v_2^2+6v_2^2)\frac{\delta_l^2\rho}{2\omega\delta_t}\frac{\partial^2 v_2}{\partial x_2^2} \\
&+ (-2+\omega)\frac{\delta_l^2\rho c_s^2}{2\omega\delta_t}\frac{\partial^2 v_3}{\partial x_2\partial x_3} + (-2+\omega)\frac{\delta_l^2\rho c_s^2}{2\omega\delta_t}\frac{\partial^2 v_2}{\partial x_3^2} + (-1+v_1^2+3c_s^2)\frac{\delta_l^3 v_1 v_2}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+3v_1^2+c_s^2)\frac{\delta_l^3\rho v_2}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + \\
&(6-6v_1^2-18c_s^2-6\omega+6\omega v_1^2+18\omega c_s^2-3\omega^2c_s^2-\omega^2v_1^2+\omega^2)\frac{\delta_l^3\rho v_1}{6\omega^2\delta_t}\frac{\partial^3 v_2}{\partial x_1^3} + (-12+12\omega-\omega^2)\frac{\delta_l^3 c_s^4}{6\omega^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} - \\
&\frac{\delta_l^3\rho v_2 c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + (12-36c_s^2-12\omega-3\omega^2v_2^2+36\omega c_s^2-11\omega^2c_s^2+12\omega v_2^2+3\omega^2-12v_2^2)\frac{\delta_l^3\rho v_2}{12\omega^2\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + \\
&C_1\frac{\delta_l^3}{12\omega^2\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-24+36c_s^2+24\omega+11\omega^2v_2^2-36\omega c_s^2+5\omega^2c_s^2-60\omega v_2^2-4\omega^2+60v_2^2)\frac{\delta_l^3\rho v_2}{6\omega^2\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} - \frac{\delta_l^3\rho v_2 c_s^2}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} \\
&+ (12-36c_s^2-12\omega-3\omega^2v_2^2+36\omega c_s^2-11\omega^2c_s^2+12\omega v_2^2+3\omega^2-12v_2^2)\frac{\delta_l^3\rho v_2}{12\omega^2\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{\delta_l^3\rho v_2 c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + \\
&(-12+12\omega-\omega^2)\frac{\delta_l^3 c_s^4}{6\omega^2\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} - \frac{\delta_l^3\rho v_2 c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+3c_s^2+v_3^2)\frac{\delta_l^3 v_2 v_3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + \\
&(6-18c_s^2-6\omega+18\omega c_s^2-\omega^2v_3^2+6\omega v_3^2-3\omega^2c_s^2+\omega^2-6v_3^2)\frac{\delta_l^3\rho v_3}{6\omega^2\delta_t}\frac{\partial^3 v_2}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{\delta_l^3\rho v_2}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + \\
&(-6v_1^2-12\omega v_1^2c_s^2-2c_s^2+3\omega v_1^2+\omega c_s^2-3\omega v_1^4-\omega c_s^4+6v_1^4+24v_1^2c_s^2+2c_s^4)\frac{\delta_l^4 v_2}{24\omega\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + \\
&(-4+10v_1^2+6c_s^2+2\omega-5\omega v_1^2-3\omega c_s^2)\frac{\delta_l^4\rho v_1 v_2}{12\omega\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_2\frac{\delta_l^4\rho}{24\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_1^4} + C_3\frac{\delta_l^4 v_1 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + \\
&(-12+36v_1^2+18\omega-54\omega v_1^2+2\omega^2c_s^2+18\omega^2v_1^2-6\omega^2-\omega^3c_s^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + \\
&(2-2v_1^2-6c_s^2-\omega+\omega v_1^2+3\omega c_s^2)\frac{\delta_l^4\rho v_1 v_2}{12\omega\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_4\frac{\delta_l^4 v_2 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + \\
&(-24+12c_s^2+36\omega+36\omega^2v_2^2-18\omega c_s^2+8\omega^2c_s^2-108\omega v_2^2-12\omega^2-\omega^3c_s^2+72v_2^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_5\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} \\
&+ C_6\frac{\delta_l^4 v_2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C_7\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + (2-2v_1^2-6c_s^2-\omega+\omega v_1^2+3\omega c_s^2)\frac{\delta_l^4\rho v_1 v_2}{12\omega\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&(-36+54\omega-\omega^3-16\omega^2)\frac{\delta_l^4\rho c_s^4}{12\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_8\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_9\frac{\delta_l^4}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{10}\frac{\delta_l^4\rho}{4\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + \\
&C_{11}\frac{\delta_l^4\rho}{4\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2} + C_{12}\frac{\delta_l^4\rho v_3}{2\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{13}\frac{\delta_l^4}{2\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C_{14}\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{15}\frac{\delta_l^4\rho v_2}{\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{16}\frac{\delta_l^4\rho}{2\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{17}\frac{\delta_l^4 v_2 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + \\
&(-24+12c_s^2+36\omega+36\omega^2v_2^2-18\omega c_s^2+8\omega^2c_s^2-108\omega v_2^2-12\omega^2-\omega^3c_s^2+72v_2^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + \\
&(2-6c_s^2-\omega+3\omega c_s^2+\omega v_3^2-2v_3^2)\frac{\delta_l^4\rho v_2 v_3}{12\omega\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{18}\frac{\delta_l^4 v_3 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + \\
&(2-6c_s^2-\omega+3\omega c_s^2+\omega v_3^2-2v_3^2)\frac{\delta_l^4\rho v_2 v_3}{12\omega\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&(-12+18\omega+18\omega^2v_3^2-54\omega v_3^2+2\omega^2c_s^2-6\omega^2+36v_3^2-\omega^3c_s^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + \\
&(6v_3^4-2c_s^2-3\omega v_3^4+\omega c_s^2+24v_3^2c_s^2+3\omega v_3^2-12\omega v_3^2c_s^2-\omega c_s^4-6v_3^2+2c_s^4)\frac{\delta_l^4 v_2}{24\omega\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{19}\frac{\delta_l^4\rho}{24\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_3^4} + \\
&(-4+6c_s^2+2\omega-3\omega c_s^2-5\omega v_3^2+10v_3^2)\frac{\delta_l^4\rho v_2 v_3}{12\omega\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$C_1 = 24\omega^2v_2^2c_s^2-12c_s^2+36v_2^4+144v_2^2c_s^2-7\omega^2v_2^2+\omega^2c_s^4+12\omega c_s^2-36\omega v_2^4-\omega^2c_s^2+7\omega^2v_2^4+36\omega v_2^2-12\omega c_s^4-144\omega v_2^2c_s^2-36v_2^2+12c_s^4$$

$$C_2 = 72v_1^2-3\omega^3c_s^4+216\omega v_1^2c_s^2-24c_s^2+3\omega^3v_1^4-108\omega v_1^2+30\omega^2c_s^4+36\omega c_s^2+6\omega^3v_1^2c_s^2-42\omega^2v_1^4-14\omega^2c_s^2+108\omega v_1^4+42\omega^2v_1^2-72\omega c_s^4-84\omega^2v_1^2c_s^2-72v_1^4+\omega^3c_s^2-144v_1^2c_s^2+48c_s^4-3\omega^3v_1^2$$

$$C_3 = 24-24v_1^2-72c_s^2-36\omega+36\omega v_1^2+108\omega c_s^2-42\omega^2c_s^2-\omega^3-14\omega^2v_1^2+14\omega^2+3\omega^3c_s^2+\omega^3v_1^2$$

$$C_4 = 24+\omega^3v_2^2-72c_s^2-36\omega-14\omega^2v_2^2+108\omega c_s^2-46\omega^2c_s^2-\omega^3+36\omega v_2^2+14\omega^2+5\omega^3c_s^2-24v_2^2$$

$$C_5 = -\omega^3c_s^4-42\omega^2v_2^2c_s^2-4\omega^3v_2^2-24c_s^2-36v_2^4-36v_2^2c_s^2+26\omega^2v_2^2+20\omega^2c_s^4+36\omega c_s^2+54\omega v_2^4-12\omega^2c_s^2-26\omega^2v_2^4-54\omega v_2^2-54\omega c_s^4+12\omega^3v_2^2c_s^2+54\omega v_2^2c_s^2+4\omega^3v_2^4+36v_2^2+36c_s^4$$

$$C_6 = 12-5\omega^3c_s^4+404\omega^2v_2^2c_s^2+10\omega^3v_2^2-132c_s^2-18\omega+144v_2^4+672v_2^2c_s^2-98\omega^2v_2^2+82\omega^2c_s^4+198\omega c_s^2-216\omega v_2^4-78\omega^2c_s^2+90\omega^2v_2^4-\omega^3+234\omega v_2^2-216\omega c_s^4-34\omega^3v_2^2c_s^2+8\omega^2-1008\omega v_2^2c_s^2-9\omega^3v_2^4+6\omega^3c_s^2-156v_2^2+144c_s^4$$

$C_7 = 12 - \omega^3 c_s^4 + 252\omega^2 v_2^2 c_s^2 + 14\omega^3 v_2^2 - 36c_s^2 - 18\omega + 504v_2^4 + 432v_2^2 c_s^2 - 154\omega^2 v_2^2 + 14\omega^2 c_s^4 + 54\omega c_s^2 - 756\omega v_2^4 - 22\omega^2 c_s^2 + 310\omega^2 v_2^4 - \omega^3 + 378\omega v_2^2 - 36\omega c_s^4 - 18\omega^3 v_2^2 c_s^2 + 8\omega^2 - 648\omega v_2^2 c_s^2 - 29\omega^3 v_2^4 + 2\omega^3 c_s^2 - 252v_2^2 + 24c_s^4$

$C_8 = -\omega^3 c_s^4 - 42\omega^2 v_2^2 c_s^2 - 4\omega^3 v_2^2 - 24c_s^2 - 36v_2^4 - 36v_2^2 c_s^2 + 26\omega^2 v_2^2 + 20\omega^2 c_s^4 + 36\omega c_s^2 + 54\omega v_2^4 - 12\omega^2 c_s^2 - 26\omega^2 v_2^4 - 54\omega v_2^2 - 54\omega c_s^4 + 12\omega^3 v_2^2 c_s^2 + 54\omega v_2^2 c_s^2 + 4\omega^3 v_2^4 + 36v_2^2 + 36c_s^4$

$C_9 = -108\omega v_2 v_3^2 c_s^2 + 3\omega^3 v_1 v_2^2 c_s^2 - 72v_1 v_2^2 c_s^2 + 108\omega v_1 v_2^2 v_3^2 + 72v_1^2 v_2 c_s^2 - 42\omega^2 v_1 v_3^2 c_s^2 - 3\omega^3 v_1^2 v_2 c_s^2 - 4\omega^2 v_2 c_s^4 - 108\omega v_1^2 v_2 v_3^2 + 42\omega^2 v_1^2 v_2 c_s^2 - 72v_1 v_3^2 c_s^2 + 3\omega^3 v_1 v_3^2 c_s^2 - 42\omega^2 v_1 v_2^2 c_s^2 - 42\omega^2 v_1 v_2^2 v_3^2 + 2\omega^3 v_2 c_s^4 + 42\omega^2 v_2 v_3^2 c_s^2 + 42\omega^2 v_1^2 v_2 v_3^2 + 108\omega v_1 v_3^2 c_s^2 + 72v_1^2 v_2 v_3^2 - 3\omega^3 v_1^2 v_2 v_3^2 - 108\omega v_1^2 v_2 c_s^2 + 3\omega^3 v_1 v_2^2 v_3^2 - 72v_1 v_2^2 v_3^2 - 3\omega^3 v_2 v_3^2 c_s^2 + 108\omega v_1 v_2^2 c_s^2 + 72v_2 v_3^2 c_s^2$

$C_{10} = -2\omega^3 v_1 v_2 v_3^2 + 48v_1 v_2 v_3^2 - 14\omega^2 v_2^2 c_s^2 - 72\omega v_1 v_2 c_s^2 + 36\omega v_2^2 v_3^2 - 24v_2^2 c_s^2 - 14\omega^2 v_3^2 c_s^2 + \omega^3 v_2^2 v_3^2 + 28\omega^2 v_1 v_2 v_3^2 - 24v_3^2 c_s^2 + 36\omega v_3^2 c_s^2 + 28\omega^2 v_1 v_2 c_s^2 + \omega^3 v_2^2 c_s^2 + 36\omega v_2^2 c_s^2 - 24v_2^2 v_3^2 - 2\omega^3 v_1 v_2 c_s^2 + 48v_1 v_2 c_s^2 - 14\omega^2 v_2^2 v_3^2 + \omega^3 v_3^2 c_s^2 - 72\omega v_1 v_2 v_3^2$

$C_{11} = 2\omega^3 v_1 v_2 v_3^2 + 24v_1^2 v_3^2 - 48v_1 v_2 v_3^2 + 72\omega v_1 v_2 c_s^2 - 36\omega v_1^2 c_s^2 + 14\omega^2 v_1^2 v_3^2 + 14\omega^2 v_3^2 c_s^2 - 4\omega^2 c_s^4 - \omega^3 v_1^2 c_s^2 - 28\omega^2 v_1 v_2 v_3^2 + 24v_3^2 c_s^2 - \omega^3 v_1^2 v_3^2 - 36\omega v_3^2 c_s^2 - 28\omega^2 v_1 v_2 c_s^2 + 12\omega c_s^4 + 14\omega^2 v_1^2 c_s^2 + 2\omega^3 v_1 v_2 c_s^2 + 24v_1^2 c_s^2 - 48v_1 v_2 c_s^2 - \omega^3 v_3^2 c_s^2 - 8c_s^4 + 72\omega v_1 v_2 v_3^2 - 36\omega v_1^2 v_3^2$

$C_{12} = -24v_1 c_s^2 - 36\omega v_2 c_s^2 - 14\omega^2 v_1 c_s^2 + 36\omega v_1 v_2^2 + \omega^3 v_1 v_2^2 + 24v_1^2 v_2 - \omega^3 v_2 c_s^2 + 14\omega^2 v_1^2 v_2 + \omega^3 v_1 c_s^2 - 36\omega v_1^2 v_2 - 24v_1 v_2^2 - \omega^3 v_1^2 v_2 + 24v_2 c_s^2 + 14\omega^2 v_2 c_s^2 - 14\omega^2 v_1 v_2^2 + 36\omega v_1 c_s^2$

$C_{13} = -\omega^3 v_1 v_2^2 c_s^2 - 14\omega^2 v_1^2 v_3 c_s^2 + 24v_1 v_2^2 c_s^2 - 36\omega v_1 v_2^2 v_3^2 + 14\omega^2 v_1 v_3^2 c_s^2 + 36\omega v_2^2 v_3 c_s^2 - 14\omega^2 v_1^2 v_2^2 v_3 + 24v_1 v_3^2 c_s^2 - \omega^3 v_1 v_3^2 c_s^2 - 24v_1^2 v_2^2 v_3 + \omega^3 v_1^2 v_2^2 v_3 + \omega^3 v_1^2 v_3 c_s^2 - 24v_1^2 v_3 c_s^2 + 14\omega^2 v_1 v_2^2 c_s^2 + 14\omega^2 v_1 v_2^2 v_3^2 + 36\omega v_1^2 v_3 c_s^2 + 36\omega v_1^2 v_2^2 v_3 - 14\omega^2 v_2^2 v_3 c_s^2 - 36\omega v_1 v_3^2 c_s^2 - 24v_2^2 v_3 c_s^2 + \omega^3 v_2^2 v_3 c_s^2 - \omega^3 v_1 v_2^2 v_3^2 + 24v_1 v_2^2 v_3^2 - 36\omega v_1 v_2^2 c_s^2$

$C_{14} =$
$-\omega^3 c_s^4 + 84\omega^2 v_2^2 c_s^2 - 216\omega v_2^2 v_3^2 + 144v_2^2 c_s^2 + 84\omega^2 v_3^2 c_s^2 - 16\omega^2 c_s^4 - 6\omega^3 v_2^2 v_3^2 + 432\omega v_1 v_3 c_s^2 + 432\omega v_1 v_2^2 v_3 + 144v_3^2 c_s^2 - 216\omega v_3^2 c_s^2 + 12\omega^3 v_1 v_2^2 v_3 - 288v_1 v_2^2 v_3 - 288v_1 v_3 c_s^2 + 12\omega^3 v_1 v_3 c_s^2 + 54\omega c_s^4 - 6\omega^3 v_2^2 c_s^2 - 216\omega v_2^2 c_s^2 - 168\omega^2 v_1 v_3 c_s^2 + 144v_2^2 v_3^2 + 84\omega^2 v_2^2 v_3^2 - 6\omega^3 v_3^2 c_s^2 - 36c_s^4 - 168\omega^2 v_1 v_2^2 v_3$

$C_{15} = 24v_1 c_s^2 + \omega^3 v_3 c_s^2 - 36\omega v_1 v_3^2 + 14\omega^2 v_1 c_s^2 - 14\omega^2 v_1^2 v_3 - \omega^3 v_1 v_3^2 + 36\omega v_3 c_s^2 - 24v_1^2 v_3 - \omega^3 v_1 c_s^2 + 36\omega v_1^2 v_3 - 24v_3 c_s^2 - 14\omega^2 v_3 c_s^2 + 14\omega^2 v_1 v_3^2 + 24v_1 v_3^2 + \omega^3 v_1^2 v_3 - 36\omega v_1 c_s^2$

$C_{16} = -14\omega^2 v_2^2 c_s^2 - 14\omega^2 v_1^2 v_2^2 + 36\omega v_1^2 c_s^2 - 24v_1^2 v_2^2 - 24v_2^2 c_s^2 - 72\omega v_1 v_3 c_s^2 - 72\omega v_1 v_2^2 v_3 + \omega^3 v_1^2 c_s^2 - 2\omega^3 v_1 v_2^2 v_3 + 48v_1 v_2^2 v_3 + \omega^3 v_1^2 v_2^2 + 48v_1 v_3 c_s^2 - 2\omega^3 v_1 v_3 c_s^2 + \omega^3 v_2^2 c_s^2 + 36\omega v_2^2 c_s^2 + 28\omega^2 v_1 v_3 c_s^2 - 14\omega^2 v_1^2 c_s^2 + 36\omega v_1^2 v_2^2 - 24v_1^2 c_s^2 + 28\omega^2 v_1 v_2^2 v_3$

$C_{17} = 24 + \omega^3 v_2^2 - 72c_s^2 - 36\omega - 14\omega^2 v_2^2 + 108\omega c_s^2 - 46\omega^2 c_s^2 - \omega^3 + 36\omega v_2^2 + 14\omega^2 + 5\omega^3 c_s^2 - 24v_2^2$

$C_{18} = 24 - 72c_s^2 - 36\omega + \omega^3 v_3^2 + 108\omega c_s^2 - 14\omega^2 v_3^2 + 36\omega v_3^2 - 42\omega^2 c_s^2 - \omega^3 + 14\omega^2 - 24v_3^2 + 3\omega^3 c_s^2$

$C_{19} = -3\omega^3 c_s^4 - 72v_3^4 - 24c_s^2 - 3\omega^3 v_3^2 - 84\omega^2 v_3^2 c_s^2 + 108\omega v_3^4 + 30\omega^2 c_s^4 + 36\omega c_s^2 + 42\omega^2 v_3^2 - 144v_3^2 c_s^2 - 108\omega v_3^2 - 14\omega^2 c_s^2 + 216\omega v_3^2 c_s^2 - 72\omega c_s^4 - 42\omega^2 v_3^4 + 72v_3^2 + \omega^3 c_s^2 + 3\omega^3 v_3^4 + 6\omega^3 v_3^2 c_s^2 + 48c_s^4$

2.1.5 Conservation of momentum: ρv_3

$$v_3 \frac{\partial \rho}{\partial t} + \rho \frac{\partial v_3}{\partial t} + \frac{\delta_l v_1 v_3}{\delta_t} \frac{\partial \rho}{\partial x_1} + \frac{\delta_l \rho v_3}{\delta_t} \frac{\partial v_1}{\partial x_1} + \frac{\delta_l \rho v_1}{\delta_t} \frac{\partial v_3}{\partial x_1} + \frac{\delta_l v_2 v_3}{\delta_t} \frac{\partial \rho}{\partial x_2} + \frac{\delta_l \rho v_3}{\delta_t} \frac{\partial v_2}{\partial x_2} + \frac{\delta_l \rho v_2}{\delta_t} \frac{\partial v_3}{\partial x_2} + (c_s^2 + v_3^2) \frac{\delta_l}{\delta_t} \frac{\partial \rho}{\partial x_3} +$$
$$\frac{2\delta_l \rho v_3}{\delta_t} \frac{\partial v_3}{\partial x_3} + (-2+\omega) \frac{\delta_l^2 c_s^2}{2\omega\delta_t} \frac{\partial \rho}{\partial x_1} \frac{\partial v_3}{\partial x_1} + (-2+\omega) \frac{\delta_l^2 c_s^2}{2\omega\delta_t} \frac{\partial \rho}{\partial x_1} \frac{\partial v_1}{\partial x_3} + (-2+\omega) \frac{\delta_l^2 c_s^2}{2\omega\delta_t} \frac{\partial \rho}{\partial x_2} \frac{\partial v_3}{\partial x_2} + (-2+\omega) \frac{\delta_l^2 c_s^2}{2\omega\delta_t} \frac{\partial \rho}{\partial x_2} \frac{\partial v_2}{\partial x_3} +$$
$$(-2 + 4c_s^2 + \omega - 2\omega c_s^2 - 3\omega v_3^2 + 6v_3^2) \frac{\delta_l^2}{\omega\delta_t} \frac{\partial \rho}{\partial x_3} \frac{\partial v_3}{\partial x_3} + (2-\omega) \frac{3\delta_l^2 \rho v_3}{\omega\delta_t} \left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega) \frac{\delta_l^2 \rho c_s^2}{2\omega\delta_t} \frac{\partial^2 v_3}{\partial x_1^2} +$$
$$(-2+\omega) \frac{\delta_l^2 \rho c_s^2}{2\omega\delta_t} \frac{\partial^2 v_3}{\partial x_2^2} + (-2+\omega) \frac{\delta_l^2 \rho c_s^2}{2\omega\delta_t} \frac{\partial^2 v_1}{\partial x_1 \partial x_3} + (-2+\omega) \frac{\delta_l^2 \rho c_s^2}{2\omega\delta_t} \frac{\partial^2 v_2}{\partial x_2 \partial x_3} + (-2 + 6c_s^2 + \omega - 3\omega c_s^2 - \omega v_3^2 + 2v_3^2) \frac{\delta_l^2 v_3}{2\omega\delta_t} \frac{\partial^2 \rho}{\partial x_3^2}$$
$$+ (-2 + 2c_s^2 + \omega - \omega c_s^2 - 3\omega v_3^2 + 6v_3^2) \frac{\delta_l^2 \rho}{2\omega\delta_t} \frac{\partial^2 v_3}{\partial x_3^2} + (-1 + v_1^2 + 3c_s^2) \frac{\delta_l^3 v_1 v_3}{12\delta_t} \frac{\partial^3 \rho}{\partial x_1^3} + (-1 + 3v_1^2 + c_s^2) \frac{\delta_l^3 \rho v_3}{12\delta_t} \frac{\partial^3 v_1}{\partial x_1^3} +$$
$$(6 - 6v_1^2 - 18c_s^2 - 6\omega + 6\omega v_1^2 + 18\omega c_s^2 - 3\omega^2 c_s^2 - \omega^2 v_1^2 + \omega^2) \frac{\delta_l^3 \rho v_1}{6\omega^2\delta_t} \frac{\partial^3 v_3}{\partial x_1^3} - \frac{\delta_l^3 \rho v_3 c_s^2}{6\delta_t} \frac{\partial^3 v_2}{\partial x_1^2 \partial x_2} - \frac{\delta_l^3 \rho v_3 c_s^2}{6\delta_t} \frac{\partial^3 v_1}{\partial x_1 \partial x_2^2} +$$
$$(-1 + 3c_s^2 + v_2^2) \frac{\delta_l^3 v_2 v_3}{12\delta_t} \frac{\partial^3 \rho}{\partial x_2^3} + (-1 + c_s^2 + 3v_2^2) \frac{\delta_l^3 \rho v_3}{12\delta_t} \frac{\partial^3 v_2}{\partial x_2^3} +$$
$$(6 - 18c_s^2 - 6\omega - \omega^2 v_2^2 + 18\omega c_s^2 - 3\omega^2 c_s^2 + 6\omega v_2^2 + \omega^2 - 6v_2^2) \frac{\delta_l^3 \rho v_2}{6\omega^2\delta_t} \frac{\partial^3 v_3}{\partial x_2^3} + (-12 + 12\omega - \omega^2) \frac{\delta_l^3 c_s^4}{6\omega^2\delta_t} \frac{\partial^3 \rho}{\partial x_1^2 \partial x_3} -$$
$$\frac{\delta_l^3 \rho v_3 c_s^2}{6\delta_t} \frac{\partial^3 v_3}{\partial x_1^2 \partial x_3} + (-12 + 12\omega - \omega^2) \frac{\delta_l^3 c_s^4}{6\omega^2\delta_t} \frac{\partial^3 \rho}{\partial x_2^2 \partial x_3} - \frac{\delta_l^3 \rho v_3 c_s^2}{6\delta_t} \frac{\partial^3 v_3}{\partial x_2^2 \partial x_3} +$$
$$(12 - 36c_s^2 - 12\omega + 36\omega c_s^2 - 3\omega^2 v_3^2 + 12\omega v_3^2 - 11\omega^2 c_s^2 + 3\omega^2 - 12v_3^2) \frac{\delta_l^3 \rho v_3}{12\omega^2\delta_t} \frac{\partial^3 v_1}{\partial x_1 \partial x_3^2} +$$
$$(12 - 36c_s^2 - 12\omega + 36\omega c_s^2 - 3\omega^2 v_3^2 + 12\omega v_3^2 - 11\omega^2 c_s^2 + 3\omega^2 - 12v_3^2) \frac{\delta_l^3 \rho v_3}{12\omega^2\delta_t} \frac{\partial^3 v_2}{\partial x_2 \partial x_3^2} + C_1 \frac{\delta_l^3}{12\omega^2\delta_t} \frac{\partial^3 \rho}{\partial x_3^3} +$$
$$(-24 + 36c_s^2 + 24\omega - 36\omega c_s^2 + 11\omega^2 v_3^2 - 60\omega v_3^2 + 5\omega^2 c_s^2 - 4\omega^2 + 60v_3^2) \frac{\delta_l^3 \rho v_3}{6\omega^2\delta_t} \frac{\partial^3 v_3}{\partial x_3^3} +$$

$$
\begin{aligned}
&(-6v_1^2 - 12\omega v_1^2 c_s^2 - 2c_s^2 + 3\omega v_1^2 + \omega c_s^2 - 3\omega v_1^4 - \omega c_s^4 + 6v_1^4 + 24v_1^2 c_s^2 + 2c_s^4)\frac{\delta_l^4 v_3}{24\omega\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + \\
&(-4 + 10v_1^2 + 6c_s^2 + 2\omega - 5\omega v_1^2 - 3\omega c_s^2)\frac{\delta_l^4 \rho v_1 v_3}{12\omega\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_2\frac{\delta_l^4\rho}{24\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^4} + \\
&(2 - 2v_1^2 - 6c_s^2 - \omega + \omega v_1^2 + 3\omega c_s^2)\frac{\delta_l^4 \rho v_1 v_3}{12\omega\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + (-2+\omega)\frac{\delta_l^4 v_3 c_s^4}{6\omega\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + (-2+3\omega-\omega^2)\frac{\delta_l^4\rho c_s^4}{\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} + \\
&(2 - 6c_s^2 - \omega + 3\omega c_s^2 + \omega v_2^2 - 2v_2^2)\frac{\delta_l^4 \rho v_2 v_3}{12\omega\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + \\
&(-2c_s^2 + 6v_2^4 + 24v_2^2 c_s^2 + \omega c_s^2 - 3\omega v_2^4 + 3\omega v_2^2 - \omega c_s^4 - 12\omega v_2^2 c_s^2 - 6v_2^2 + 2c_s^4)\frac{\delta_l^4 v_3}{24\omega\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + \\
&(-4 + 6c_s^2 + 2\omega - 3\omega c_s^2 - 5\omega v_2^2 + 10v_2^2)\frac{\delta_l^4 \rho v_2 v_3}{12\omega\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C_3\frac{\delta_l^4\rho}{24\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_2^4} + C_4\frac{\delta_l^4 v_1 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + \\
&(-12 + 36v_1^2 + 18\omega - 54\omega v_1^2 + 2\omega^2 c_s^2 + 18\omega^2 v_1^2 - 6\omega^2 - \omega^3 c_s^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + \\
&(2 - 2v_1^2 - 6c_s^2 - \omega + \omega v_1^2 + 3\omega c_s^2)\frac{\delta_l^4 \rho v_1 v_3}{12\omega\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_5\frac{\delta_l^4}{2\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_6\frac{\delta_l^4\rho}{2\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_7\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} \\
&+ C_8\frac{\delta_l^4\rho v_3}{\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_9\frac{\delta_l^4}{2\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{10}\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{11}\frac{\delta_l^4\rho v_2}{\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C_{12}\frac{\delta_l^4\rho}{2\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} \\
&+ C_{13}\frac{\delta_l^4 v_2 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + (-12 + 18\omega + 18\omega^2 v_2^2 + 2\omega^2 c_s^2 - 54\omega v_2^2 - 6\omega^2 - \omega^3 c_s^2 + 36v_2^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + \\
&(2 - 6c_s^2 - \omega + 3\omega c_s^2 + \omega v_2^2 - 2v_2^2)\frac{\delta_l^4 \rho v_2 v_3}{12\omega\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_{14}\frac{\delta_l^4 v_3 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + \\
&(-24 + 12c_s^2 + 36\omega - 18\omega c_s^2 + 36\omega^2 v_3^2 - 108\omega v_3^2 + 8\omega^2 c_s^2 - 12\omega^2 + 72v_3^2 - \omega^3 c_s^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{15}\frac{\delta_l^4 v_3 c_s^2}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} \\
&+ (-24 + 12c_s^2 + 36\omega - 18\omega c_s^2 + 36\omega^2 v_3^2 - 108\omega v_3^2 + 8\omega^2 c_s^2 - 12\omega^2 + 72v_3^2 - \omega^3 c_s^2)\frac{\delta_l^4\rho c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + \\
&C_{16}\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{17}\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{18}\frac{\delta_l^4 v_3}{12\omega^3\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{19}\frac{\delta_l^4\rho}{12\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$C_1 = 36v_3^4 - 12c_s^2 + 24\omega^2 v_3^2 c_s^2 - 36\omega v_3^4 + \omega^2 c_s^4 + 12\omega c_s^2 - 7\omega^2 v_3^2 + 144v_3^2 c_s^2 + 36\omega v_3^2 - \omega^2 c_s^2 - 144\omega v_3^2 c_s^2 - 12\omega c_s^4 + 7\omega^2 v_3^4 - 36v_3^2 + 12c_s^4$$

$$C_2 = 72v_1^2 - 3\omega^3 c_s^4 + 216\omega v_1^2 c_s^2 - 24c_s^2 + 3\omega^3 v_1^4 - 108\omega v_1^2 + 30\omega^2 c_s^4 + 36\omega c_s^2 + 6\omega^3 v_1^2 c_s^2 - 42\omega^2 v_1^4 - 14\omega^2 c_s^2 + 108\omega v_1^4 + 42\omega^2 v_1^2 - 72\omega c_s^4 - 84\omega^2 v_1^2 c_s^2 - 72v_1^4 + \omega^3 c_s^2 - 144v_1^2 c_s^2 + 48c_s^4 - 3\omega^3 v_1^2$$

$$C_3 = -3\omega^3 c_s^4 - 84\omega^2 v_2^2 c_s^2 - 3\omega^3 v_2^2 - 24c_s^2 - 72v_2^4 - 144v_2^2 c_s^2 + 42\omega^2 v_2^2 + 30\omega^2 c_s^4 + 36\omega c_s^2 + 108\omega v_2^4 - 14\omega^2 c_s^2 - 42\omega^2 v_2^4 - 108\omega v_2^2 - 72\omega c_s^4 + 6\omega^3 v_2^2 c_s^2 + 216\omega v_2^2 c_s^2 + 3\omega^3 v_2^4 + \omega^3 c_s^2 + 72v_2^2 + 48c_s^4$$

$$C_4 = 24 - 24v_1^2 - 72c_s^2 - 36\omega + 36\omega v_1^2 + 108\omega c_s^2 - 42\omega^2 c_s^2 - \omega^3 - 14\omega^2 v_1^2 + 14\omega^2 + 3\omega^3 c_s^2 + \omega^3 v_1^2$$

$$C_5 = -36\omega v_2 v_3^2 c_s^2 + \omega^3 v_1 v_2^2 c_s^2 - 24v_1 v_2^2 c_s^2 + 36\omega v_1 v_2^2 v_3^2 + 24v_1^2 v_2 c_s^2 - 14\omega^2 v_1 v_3^2 c_s^2 - \omega^3 v_1^2 v_2 c_s^2 - 36\omega v_1^2 v_2 v_3^2 + 14\omega^2 v_1^2 v_2 c_s^2 - 24v_1 v_3^2 c_s^2 + \omega^3 v_1 v_3^2 c_s^2 - 14\omega^2 v_1 v_2^2 c_s^2 - 14\omega^2 v_1 v_2^2 v_3^2 + 14\omega^2 v_2 v_3^2 c_s^2 + 14\omega^2 v_1^2 v_2 v_3^2 + 36\omega v_1 v_3^2 c_s^2 + 24v_1^2 v_2 v_3^2 - \omega^3 v_1^2 v_2 v_3^2 - 36\omega v_1^2 v_2 c_s^2 + \omega^3 v_1 v_2^2 v_3^2 - 24v_1 v_2^2 v_3^2 - \omega^3 v_2 v_3^2 c_s^2 + 36\omega v_1 v_2^2 c_s^2 + 24v_2 v_3^2 c_s^2$$

$$C_6 = -2\omega^3 v_1 v_2 v_3^2 + 48v_1 v_2 v_3^2 - 14\omega^2 v_2^2 c_s^2 - 72\omega v_1 v_2 c_s^2 + 36\omega v_2^2 v_3^2 - 24v_2^2 c_s^2 - 14\omega^2 v_3^2 c_s^2 + \omega^3 v_2^2 v_3^2 + 28\omega^2 v_1 v_2 v_3^2 - 24v_3^2 c_s^2 + 36\omega v_3^2 c_s^2 + 28\omega^2 v_1 v_2 c_s^2 + \omega^3 v_2^2 c_s^2 + 36\omega v_2^2 c_s^2 - 24v_2^2 v_3^2 - 2\omega^3 v_1 v_2 c_s^2 + 48v_1 v_2 c_s^2 - 14\omega^2 v_2^2 v_3^2 + \omega^3 v_3^2 c_s^2 - 72\omega v_1 v_2 v_3^2$$

$$C_7 = 12\omega^3 v_1 v_2 v_3^2 + 144v_1^2 v_3^2 - \omega^3 c_s^4 - 288v_1 v_2 v_3^2 + 432\omega v_1 v_2 c_s^2 - 216\omega v_1^2 c_s^2 + 84\omega^2 v_1^2 v_3^2 + 84\omega^2 v_3^2 c_s^2 - 16\omega^2 c_s^4 - 6\omega^3 v_1^2 c_s^2 - 168\omega^2 v_1 v_2 v_3^2 + 144v_3^2 c_s^2 - 6\omega^3 v_1^2 v_3^2 - 216\omega v_3^2 c_s^2 - 168\omega^2 v_1 v_2 c_s^2 + 54\omega c_s^4 + 84\omega^2 v_1^2 c_s^2 + 12\omega^3 v_1 v_2 c_s^2 + 144v_1^2 c_s^2 - 288v_1 v_2 c_s^2 - 6\omega^3 v_3^2 c_s^2 - 36c_s^4 + 432\omega v_1 v_2 v_3^2 - 216\omega v_1^2 v_3^2$$

$$C_8 = -24v_1 c_s^2 - 36\omega v_2 c_s^2 - 14\omega^2 v_1 c_s^2 + 36\omega v_1 v_2^2 + \omega^3 v_1 v_2^2 + 24v_1^2 v_2 - \omega^3 v_2 c_s^2 + 14\omega^2 v_1^2 v_2 + \omega^3 v_1 c_s^2 - 36\omega v_1^2 v_2 - 24v_1 v_2^2 - \omega^3 v_1^2 v_2 + 24v_2 c_s^2 + 14\omega^2 v_2 c_s^2 - 14\omega^2 v_1 v_2^2 + 36\omega v_1 c_s^2$$

$$C_9 = -\omega^3 v_1 v_2^2 c_s^2 - 14\omega^2 v_1^2 v_3 c_s^2 + 24v_1 v_2^2 c_s^2 - 36\omega v_1 v_2^2 v_3^2 + 14\omega^2 v_1 v_3^2 c_s^2 + 36\omega v_2^2 v_3 c_s^2 - 14\omega^2 v_1^2 v_2^2 v_3 + 24v_1 v_3^2 c_s^2 - \omega^3 v_1 v_3^2 c_s^2 - 24v_1^2 v_2^2 v_3 + \omega^3 v_1^2 v_2^2 v_3 + \omega^3 v_1^2 v_3 c_s^2 - 24v_1^2 v_3 c_s^2 + 14\omega^2 v_1 v_2^2 c_s^2 + 14\omega^2 v_1 v_2^2 v_3^2 + 36\omega v_1^2 v_3 c_s^2 + 36\omega v_1^2 v_2^2 v_3 - 14\omega^2 v_2^2 v_3 c_s^2 - 36\omega v_1 v_3^2 c_s^2 - 24v_2^2 v_3 c_s^2 + \omega^3 v_2^2 v_3 c_s^2 - \omega^3 v_1 v_2^2 v_3^2 + 24v_1 v_2^2 v_3^2 - 36\omega v_1 v_2^2 c_s^2$$

$$C_{10} = -\omega^3 c_s^4 + 84\omega^2 v_2^2 c_s^2 - 216\omega v_2^2 v_3^2 + 144v_2^2 c_s^2 + 84\omega^2 v_3^2 c_s^2 - 16\omega^2 c_s^4 - 6\omega^3 v_2^2 v_3^2 + 432\omega v_1 v_3 c_s^2 + 432\omega v_1 v_2^2 v_3 + 144v_3^2 c_s^2 - 216\omega v_3^2 c_s^2 + 12\omega^3 v_1 v_2^2 v_3 - 288v_1 v_2^2 v_3 - 288v_1 v_3 c_s^2 + 12\omega^3 v_1 v_3 c_s^2 + 54\omega c_s^4 - 6\omega^3 v_2^2 c_s^2 - 216\omega v_2^2 c_s^2 - 168\omega^2 v_1 v_3 c_s^2 + 144v_2^2 v_3^2 + 84\omega^2 v_2^2 v_3^2 - 6\omega^3 v_3^2 c_s^2 - 36c_s^4 - 168\omega^2 v_1 v_2^2 v_3$$

$$C_{11} = 24v_1 c_s^2 + \omega^3 v_3 c_s^2 - 36\omega v_1 v_3^2 + 14\omega^2 v_1 c_s^2 - 14\omega^2 v_1^2 v_3 - \omega^3 v_1 v_3^2 + 36\omega v_3 c_s^2 - 24v_1^2 v_3 - \omega^3 v_1 c_s^2 + 36\omega v_1^2 v_3 - 24v_3 c_s^2 - 14\omega^2 v_3 c_s^2 + 14\omega^2 v_1 v_3^2 + 24v_1 v_3^2 + \omega^3 v_1^2 v_3 - 36\omega v_1 c_s^2$$

$$C_{12} = -14\omega^2 v_2^2 c_s^2 - 14\omega^2 v_1^2 v_2^2 + 36\omega v_1^2 c_s^2 - 24v_1^2 v_2^2 - 24v_2^2 c_s^2 - 72\omega v_1 v_3 c_s^2 - 72\omega v_1 v_2^2 v_3 + \omega^3 v_1^2 c_s^2 - 2\omega^3 v_1 v_2^2 v_3 + 48v_1 v_2^2 v_3 + \omega^3 v_1^2 v_2^2 + 48v_1 v_3 c_s^2 - 2\omega^3 v_1 v_3 c_s^2 + \omega^3 v_2^2 c_s^2 + 36\omega v_2^2 c_s^2 + 28\omega^2 v_1 v_3 c_s^2 - 14\omega^2 v_1^2 c_s^2 + 36\omega v_1^2 v_2^2 - 24v_1^2 c_s^2 + 28\omega^2 v_1 v_2^2 v_3$$

$C_{13} = 24 + \omega^3 v_2^2 - 72c_s^2 - 36\omega - 14\omega^2 v_2^2 + 108\omega c_s^2 - 42\omega^2 c_s^2 - \omega^3 + 36\omega v_2^2 + 14\omega^2 + 3\omega^3 c_s^2 - 24v_2^2$

$C_{14} = 24 - 72c_s^2 - 36\omega + \omega^3 v_3^2 + 108\omega c_s^2 - 14\omega^2 v_3^2 + 36\omega v_3^2 - 46\omega^2 c_s^2 - \omega^3 + 14\omega^2 - 24v_3^2 + 5\omega^3 c_s^2$

$C_{15} = 24 - 72c_s^2 - 36\omega + \omega^3 v_3^2 + 108\omega c_s^2 - 14\omega^2 v_3^2 + 36\omega v_3^2 - 46\omega^2 c_s^2 - \omega^3 + 14\omega^2 - 24v_3^2 + 5\omega^3 c_s^2$

$C_{16} = -\omega^3 c_s^4 - 36v_3^4 - 24c_s^2 - 4\omega^3 v_3^2 - 42\omega^2 v_3^2 c_s^2 + 54\omega v_3^4 + 20\omega^2 c_s^4 + 36\omega c_s^2 + 26\omega^2 v_3^2 - 36v_3^2 c_s^2 - 54\omega v_3^2 - 12\omega^2 c_s^2 + 54\omega v_3^2 c_s^2 - 54\omega c_s^4 - 26\omega^2 v_3^4 + 36v_3^2 + 4\omega^3 v_3^4 + 12\omega^3 v_3^2 c_s^2 + 36c_s^4$

$C_{17} = -\omega^3 c_s^4 - 36v_3^4 - 24c_s^2 - 4\omega^3 v_3^2 - 42\omega^2 v_3^2 c_s^2 + 54\omega v_3^4 + 20\omega^2 c_s^4 + 36\omega c_s^2 + 26\omega^2 v_3^2 - 36v_3^2 c_s^2 - 54\omega v_3^2 - 12\omega^2 c_s^2 + 54\omega v_3^2 c_s^2 - 54\omega c_s^4 - 26\omega^2 v_3^4 + 36v_3^2 + 4\omega^3 v_3^4 + 12\omega^3 v_3^2 c_s^2 + 36c_s^4$

$C_{18} = 12 - 5\omega^3 c_s^4 + 144v_3^4 - 132c_s^2 - 18\omega + 10\omega^3 v_3^2 + 404\omega^2 v_3^2 c_s^2 - 216\omega v_3^4 + 82\omega^2 c_s^4 + 198\omega c_s^2 - 98\omega^2 v_3^2 + 672v_3^2 c_s^2 + 234\omega v_3^2 - 78\omega^2 c_s^2 - 1008\omega v_3^2 c_s^2 - \omega^3 - 216\omega c_s^4 + 90\omega^2 v_3^4 + 8\omega^2 - 156v_3^2 + 6\omega^3 c_s^2 - 9\omega^3 v_3^4 - 34\omega^3 v_3^2 c_s^2 + 144c_s^4$

$C_{19} = 12 - \omega^3 c_s^4 + 504v_3^4 - 36c_s^2 - 18\omega + 14\omega^3 v_3^2 + 252\omega^2 v_3^2 c_s^2 - 756\omega v_3^4 + 14\omega^2 c_s^4 + 54\omega c_s^2 - 154\omega^2 v_3^2 + 432v_3^2 c_s^2 + 378\omega v_3^2 - 22\omega^2 c_s^2 - 648\omega v_3^2 c_s^2 - \omega^3 - 36\omega c_s^4 + 310\omega^2 v_3^4 + 8\omega^2 - 252v_3^2 + 2\omega^3 c_s^2 - 29\omega^3 v_3^4 - 18\omega^3 v_3^2 c_s^2 + 24c_s^4$

2.2 MRT

2.2.1 Definitions

Collision operator $\boldsymbol{C}$:

$$\boldsymbol{C}(\boldsymbol{f}) = \mathbf{M}^{-1}\mathbf{S}\left(\boldsymbol{\mu}^{(eq)} - \mathbf{M}\boldsymbol{f}\right),$$

where

$$\mathbf{S} = \mathrm{diag}(\omega_1, \omega_2, \omega_3, \cdots, \omega_{27}),$$

$\omega_1, \omega_2, \cdots, \omega_{27} \in (0, 2)$.

2.2.2 Conservation of mass: ρ

$\frac{\partial \rho}{\partial t} + \frac{\delta_l v_1}{\delta_t}\frac{\partial \rho}{\partial x_1} + \frac{\delta_l \rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l v_2}{\delta_t}\frac{\partial \rho}{\partial x_2} + \frac{\delta_l \rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3 \delta_l}{\delta_t}\frac{\partial \rho}{\partial x_3} + \frac{\delta_l \rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-1 + 3c_s^2 + v_1^2)\frac{\delta_l^3 v_1}{12\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} +$
$(-1 + c_s^2 + 3v_1^2)\frac{\delta_l^3 \rho}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{c_s^2 \delta_l^3 \rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2 \partial x_2} - \frac{c_s^2 \delta_l^3 \rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1 \partial x_2^2} + (-1 + 3c_s^2 + v_2^2)\frac{\delta_l^3 v_2}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + (-1 + c_s^2 + 3v_2^2)\frac{\delta_l^3 \rho}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} -$
$\frac{c_s^2 \delta_l^3 \rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2 \partial x_3} - \frac{c_s^2 \delta_l^3 \rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2 \partial x_3} - \frac{c_s^2 \delta_l^3 \rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1 \partial x_3^2} - \frac{c_s^2 \delta_l^3 \rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2 \partial x_3^2} + (-1 + 3c_s^2 + v_3^2)\frac{v_3 \delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + (-1 + c_s^2 + 3v_3^2)\frac{\delta_l^3 \rho}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}$
$+ (-12c_s^2\omega_9 v_1^2 - 2c_s^2 + c_s^2\omega_9 + 3\omega_9 v_1^2 + 6v_1^4 - 3\omega_9 v_1^4 + 24c_s^2 v_1^2 - 6v_1^2 - c_s^4\omega_9 + 2c_s^4)\frac{\delta_l^4}{24\omega_9\delta_t}\frac{\partial^4 \rho}{\partial x_1^4} +$
$(-4 + 6c_s^2 - 3c_s^2\omega_9 - 5\omega_9 v_1^2 + 10v_1^2 + 2\omega_9)\frac{\delta_l^4 \rho v_1}{12\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} +$
$(-3c_s^2\omega_9 - \omega_9 v_1^2 + \omega_{12} v_1^2 + 3c_s^2\omega_{12} + \omega_9 - \omega_{12})\frac{\delta_l^4 v_2 v_1}{4\omega_9\omega_{12}\delta_t}\frac{\partial^4 \rho}{\partial x_1^3 \partial x_2} +$
$(-c_s^2\omega_9 - 3\omega_9 v_1^2 + 3\omega_{12} v_1^2 + c_s^2\omega_{12} + \omega_9 - \omega_{12})\frac{\delta_l^4 \rho v_2}{4\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_1}{\partial x_1^3 \partial x_2} + (3c_s^2\omega_5\omega_{12} - 6c_s^2\omega_9\omega_{12} + 3c_s^2\omega_5\omega_9\omega_{12} - \omega_5\omega_{12} +$
$\omega_5\omega_{12} v_1^2 + 3\omega_5\omega_9 - 3\omega_5\omega_9 v_1^2 - \omega_5\omega_9\omega_{12} + \omega_5\omega_9\omega_{12} v_1^2 - 3c_s^2\omega_5\omega_9)\frac{\delta_l^4 \rho v_1}{12\omega_5\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^3 \partial x_2} + (-2 + \omega_5)\frac{c_s^4 \delta_l^4}{6\omega_5\delta_t}\frac{\partial^4 \rho}{\partial x_1^2 \partial x_2^2} +$
$(\omega_5 - \omega_{12})\frac{c_s^2 \delta_l^4 \rho v_1}{2\omega_5\omega_{12}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2 \partial x_2^2} + (\omega_5 - \omega_{15})\frac{c_s^2 \delta_l^4 \rho v_2}{2\omega_5\omega_{15}\delta_t}\frac{\partial^4 v_2}{\partial x_1^2 \partial x_2^2} +$
$(-3\omega_{10}c_s^2 + \omega_{10} + \omega_{15} v_2^2 + 3c_s^2\omega_{15} - \omega_{15} - \omega_{10} v_2^2)\frac{\delta_l^4 v_2 v_1}{4\omega_{10}\omega_{15}\delta_t}\frac{\partial^4 \rho}{\partial x_1 \partial x_2^3} + (-3\omega_{10}\omega_5 v_2^2 - 6\omega_{10}c_s^2\omega_{15} - \omega_{10}\omega_5\omega_{15} -$
$\omega_5\omega_{15} + 3c_s^2\omega_5\omega_{15} - 3\omega_{10}c_s^2\omega_5 + 3\omega_{10}c_s^2\omega_5\omega_{15} + 3\omega_{10}\omega_5 + \omega_{10}\omega_5\omega_{15} v_2^2 + \omega_5\omega_{15} v_2^2)\frac{\delta_l^4 \rho v_2}{12\omega_{10}\omega_5\omega_{15}\delta_t}\frac{\partial^4 v_1}{\partial x_1 \partial x_2^3} +$
$(-\omega_{10}c_s^2 + \omega_{10} + 3\omega_{15} v_2^2 + c_s^2\omega_{15} - \omega_{15} - 3\omega_{10} v_2^2)\frac{\delta_l^4 \rho v_1}{4\omega_{10}\omega_{15}\delta_t}\frac{\partial^4 v_2}{\partial x_1 \partial x_2^3} +$
$(\omega_{10}c_s^2 - 2c_s^2 + 6v_2^4 - 3\omega_{10} v_2^4 - 12\omega_{10}c_s^2 v_2^2 - 6v_2^2 + 24c_s^2 v_2^2 + 3\omega_{10} v_2^2 - \omega_{10}c_s^4 + 2c_s^4)\frac{\delta_l^4}{24\omega_{10}\delta_t}\frac{\partial^4 \rho}{\partial x_2^4} +$
$(-4 - 3\omega_{10}c_s^2 + 2\omega_{10} + 6c_s^2 + 10v_2^2 - 5\omega_{10} v_2^2)\frac{\delta_l^4 \rho v_2}{12\omega_{10}\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} +$
$(-\omega_{13} - 3c_s^2\omega_9 - \omega_9 v_1^2 + 3\omega_{13}c_s^2 + \omega_9 + \omega_{13} v_1^2)\frac{v_3 \delta_l^4 v_1}{4\omega_{13}\omega_9\delta_t}\frac{\partial^4 \rho}{\partial x_1^3 \partial x_3} +$

$$(-\omega_{13} - c_s^2\omega_9 - 3\omega_9 v_1^2 + \omega_{13}c_s^2 + \omega_9 + 3\omega_{13}v_1^2)\frac{v_3\delta_l^4\rho}{4\omega_{13}\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + (3\omega_{13}c_s^2\omega_6 + \omega_{13}\omega_6 v_1^2 - 3c_s^2\omega_9\omega_6 - 3\omega_9\omega_6 v_1^2 +$$
$$3\omega_{13}c_s^2\omega_9\omega_6 + \omega_{13}\omega_9\omega_6 v_1^2 + 3\omega_9\omega_6 - \omega_{13}\omega_6 - \omega_{13}\omega_9\omega_6 - 6\omega_{13}c_s^2\omega_9)\frac{\delta_l^4\rho v_1}{12\omega_{13}\omega_9\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$(-\omega_8 + \omega_5)\frac{v_3c_s^2\delta_l^4\rho}{2\omega_8\omega_5\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + (-\omega_8 + \omega_6)\frac{c_s^2\delta_l^4\rho v_2}{2\omega_8\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + (-\omega_8 + \omega_5)\frac{v_3c_s^2\delta_l^4\rho}{2\omega_8\omega_5\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} +$$
$$(\omega_7 - \omega_8)\frac{c_s^2\delta_l^4\rho v_1}{2\omega_7\omega_8\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + (-3\omega_{10}c_s^2 + \omega_{10} - \omega_{10}v_2^2 + v_2^2\omega_{16} + 3c_s^2\omega_{16} - \omega_{16})\frac{v_3\delta_l^4 v_2}{4\omega_{10}\delta_t\omega_{16}}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} +$$
$$(-\omega_{10}c_s^2 + \omega_{10} - 3\omega_{10}v_2^2 + 3v_2^2\omega_{16} + c_s^2\omega_{16} - \omega_{16})\frac{v_3\delta_l^4\rho}{4\omega_{10}\delta_t\omega_{16}}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + (3\omega_{10}\omega_7 + 3\omega_7c_s^2\omega_{16} + 3\omega_{10}\omega_7c_s^2\omega_{16} +$$
$$\omega_7v_2^2\omega_{16} + \omega_{10}\omega_7v_2^2\omega_{16} - 3\omega_{10}\omega_7c_s^2 - \omega_7\omega_{16} - \omega_{10}\omega_7\omega_{16} - 3\omega_{10}\omega_7v_2^2 - 6\omega_{10}c_s^2\omega_{16})\frac{\delta_l^4\rho v_2}{12\omega_{10}\omega_7\delta_t\omega_{16}}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$(-2 + \omega_6)\frac{c_s^4\delta_l^4}{6\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + (-\omega_{13} + \omega_6)\frac{c_s^2\delta_l^4\rho v_1}{2\omega_{13}\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + (-\omega_{18} + \omega_6)\frac{v_3c_s^2\delta_l^4\rho}{2\omega_{18}\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} +$$
$$(-\omega_8 + \omega_6)\frac{c_s^2\delta_l^4\rho v_2}{2\omega_8\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + (\omega_7 - \omega_8)\frac{c_s^2\delta_l^4\rho v_1}{2\omega_7\omega_8\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + (-2 + \omega_7)\frac{c_s^4\delta_l^4}{6\omega_7\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + (\omega_7 - \omega_{16})\frac{c_s^2\delta_l^4\rho v_2}{2\omega_7\delta_t\omega_{16}}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2}$$
$$+ (\omega_7 - \omega_{19})\frac{v_3c_s^2\delta_l^4\rho}{2\omega_7\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + (3c_s^2\omega_{18} - v_3^2\omega_{11} + \omega_{11} - 3c_s^2\omega_{11} - \omega_{18} + v_3^2\omega_{18})\frac{v_3\delta_l^4 v_1}{4\omega_{11}\omega_{18}\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} +$$
$$(v_3^2\omega_{11}\omega_{18}\omega_6 - 6c_s^2\omega_{11}\omega_{18} - \omega_{11}\omega_{18}\omega_6 + 3c_s^2\omega_{18}\omega_6 + 3c_s^2\omega_{11}\omega_{18}\omega_6 - 3c_s^2\omega_{11}\omega_6 + 3\omega_{11}\omega_6 + v_3^2\omega_{18}\omega_6 - \omega_{18}\omega_6 -$$
$$3v_3^2\omega_{11}\omega_6)\frac{v_3\delta_l^4\rho}{12\omega_{11}\omega_{18}\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + (c_s^2\omega_{18} - 3v_3^2\omega_{11} + \omega_{11} - c_s^2\omega_{11} - \omega_{18} + 3v_3^2\omega_{18})\frac{\delta_l^4\rho v_1}{4\omega_{11}\omega_{18}\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$(-v_3^2\omega_{11} + \omega_{11} + v_3^2\omega_{19} - 3c_s^2\omega_{11} - \omega_{19} + 3c_s^2\omega_{19})\frac{v_3\delta_l^4 v_2}{4\omega_{11}\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + (3\omega_7c_s^2\omega_{19} + 3\omega_7c_s^2\omega_{11}\omega_{19} + \omega_7v_3^2\omega_{11}\omega_{19} -$$
$$\omega_7\omega_{11}\omega_{19} - 3\omega_7c_s^2\omega_{11} + \omega_7v_3^2\omega_{19} - \omega_7\omega_{19} + 3\omega_7\omega_{11} - 3\omega_7v_3^2\omega_{11} - 6c_s^2\omega_{11}\omega_{19})\frac{v_3\delta_l^4\rho}{12\omega_7\omega_{11}\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$(-3v_3^2\omega_{11} + \omega_{11} + 3v_3^2\omega_{19} - c_s^2\omega_{11} - \omega_{19} + c_s^2\omega_{19})\frac{\delta_l^4\rho v_2}{4\omega_{11}\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} +$$
$$(-c_s^4\omega_{11} + 3v_3^2\omega_{11} - 2c_s^2 - 6v_3^2 + c_s^2\omega_{11} - 3v_3^4\omega_{11} + 24v_3^2c_s^2 + 6v_3^4 - 12v_3^2c_s^2\omega_{11} + 2c_s^4)\frac{\delta_l^4}{24\omega_{11}\delta_t}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$(-4 - 5v_3^2\omega_{11} + 6c_s^2 + 2\omega_{11} + 10v_3^2 - 3c_s^2\omega_{11})\frac{v_3\delta_l^4\rho}{12\omega_{11}\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0.$$

2.2.3 Conservation of momentum: ρv_1

$$v_1\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (c_s^2 + v_1^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{2\delta_l\rho v_1}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l v_2 v_1}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{\delta_l\rho v_2}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{\delta_l\rho v_1}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3\delta_l v_1}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_3} +$$
$$\frac{\delta_l\rho v_1}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2 + 4c_s^2 - 2c_s^2\omega_9 - 3\omega_9v_1^2 + 6v_1^2 + \omega_9)\frac{\delta_l^2}{\omega_9\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + (2 - \omega_9)\frac{3\delta_l^2\rho v_1}{\omega_9\delta_t}\left(\frac{\partial v_1}{\partial x_1}\right)^2 +$$
$$(-2 + \omega_5)\frac{c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + (-2 + \omega_5)\frac{c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + (-2 + \omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2 + \omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} +$$
$$(-2 + 6c_s^2 - 3c_s^2\omega_9 - \omega_9v_1^2 + 2v_1^2 + \omega_9)\frac{\delta_l^2 v_1}{2\omega_9\delta_t}\frac{\partial^2\rho}{\partial x_1^2} + (-2 + 2c_s^2 - c_s^2\omega_9 - 3\omega_9v_1^2 + 6v_1^2 + \omega_9)\frac{\delta_l^2\rho}{2\omega_9\delta_t}\frac{\partial^2 v_1}{\partial x_1^2} +$$
$$(-2 + \omega_5)\frac{c_s^2\delta_l^2\rho}{2\omega_5\delta_t}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2 + \omega_5)\frac{c_s^2\delta_l^2\rho}{2\omega_5\delta_t}\frac{\partial^2 v_1}{\partial x_2^2} + (-2 + \omega_6)\frac{c_s^2\delta_l^2\rho}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2 + \omega_6)\frac{c_s^2\delta_l^2\rho}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\omega_9^2\delta_t}\frac{\partial^3\rho}{\partial x_1^3} +$$
$$(-24 - 4\omega_9^2 + 5c_s^2\omega_9^2 + 36c_s^2 - 36c_s^2\omega_9 - 60\omega_9v_1^2 + 11\omega_9^2v_1^2 + 60v_1^2 + 24\omega_9)\frac{\delta_l^3\rho v_1}{6\omega_9^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_2\frac{\delta_l^3 v_2 v_1}{\omega_5\omega_9^2\omega_{12}\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} +$$
$$C_3\frac{\delta_l^3\rho v_2}{\omega_5\omega_9^2\omega_{12}\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} + C_4\frac{\delta_l^3\rho v_1}{12\omega_5^2\omega_9^2\omega_{12}\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + (-12 + 12\omega_5 - \omega_5^2)\frac{c_s^4\delta_l^3}{6\omega_5^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} +$$
$$(-12\omega_9\omega_{12} - 12\omega_5\omega_{12} - 12\omega_5^2\omega_9 - \omega_5^2\omega_9\omega_{12} + 12\omega_5\omega_9 + 12\omega_5^2 + 12\omega_5\omega_9\omega_{12})\frac{c_s^2\delta_l^3\rho v_1}{6\omega_5^2\omega_9\omega_{12}\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} +$$
$$(2\omega_5 - \omega_5^2 - 2\omega_{15} + \omega_5\omega_{15})\frac{c_s^2\delta_l^3\rho v_2}{\omega_5^2\omega_{15}\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + C_5\frac{\delta_l^3 v_2 v_1}{12\omega_{10}\omega_5\omega_{15}\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C_6\frac{\delta_l^3\rho v_2}{6\omega_5^2\omega_{15}\delta_t}\frac{\partial^3 v_1}{\partial x_2^3} + C_7\frac{\delta_l^3\rho v_1}{12\omega_{10}\omega_5\omega_{15}\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} +$$
$$C_8\frac{v_3\delta_l^3 v_1}{\omega_{13}\omega_9^2\omega_6\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + C_9\frac{v_3\delta_l^3\rho}{\omega_{13}\omega_9^2\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} + C_{10}\frac{\delta_l^3\rho v_1}{12\omega_{13}\omega_9^2\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} +$$
$$(-\omega_8\omega_6 - \omega_8\omega_5 + \omega_8\omega_5\omega_6 + \omega_5\omega_6 - \omega_5^2\omega_6 + \omega_5^2)\frac{v_3c_s^2\delta_l^3\rho}{\omega_8\omega_5^2\omega_6\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} +$$
$$(-\omega_8\omega_6 - \omega_5\omega_6^2 - \omega_8\omega_5 + \omega_8\omega_5\omega_6 + \omega_5\omega_6 + \omega_6^2)\frac{c_s^2\delta_l^3\rho v_2}{\omega_8\omega_5\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} +$$
$$(-\omega_8\omega_6 - \omega_8\omega_5 + \omega_8\omega_5\omega_6 + \omega_5\omega_6 - \omega_5^2\omega_6 + \omega_5^2)\frac{v_3c_s^2\delta_l^3\rho}{\omega_8\omega_5^2\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_2^2\partial x_3} +$$
$$(-6\omega_8\omega_6 - 6\omega_8\omega_5 + 6\omega_8\omega_5\omega_6 - 6\omega_7\omega_5\omega_6 - \omega_7\omega_8\omega_5\omega_6 + 6\omega_7\omega_5 + 6\omega_7\omega_6)\frac{c_s^2\delta_l^3\rho v_1}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} +$$
$$(-12 + 12\omega_6 - \omega_6^2)\frac{c_s^4\delta_l^3}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} +$$

$$
\begin{aligned}
&(-12\omega_{13}\omega_9 - 12\omega_9\omega_6^2 + 12\omega_9\omega_6 - \omega_{13}\omega_9\omega_6^2 + 12\omega_6^2 - 12\omega_{13}\omega_6 + 12\omega_{13}\omega_9\omega_6)\frac{c_s^2\delta_l^3\rho v_1}{6\omega_{13}\omega_9\omega_6^2\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + \\
&(-2\omega_{18} + 2\omega_6 - \omega_6^2 + \omega_{18}\omega_6)\frac{v_3c_s^2\delta_l^3\rho}{\omega_{18}\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + (-\omega_8\omega_6 - \omega_5\omega_6^2 - \omega_8\omega_5 + \omega_8\omega_5\omega_6 + \omega_5\omega_6 + \omega_6^2)\frac{c_s^2\delta_l^3\rho v_2}{\omega_8\omega_5\omega_6^2\delta_t}\frac{\partial^3 v_1}{\partial x_2\partial x_3^2} + \\
&(-6\omega_8\omega_6 - 6\omega_8\omega_5 + 6\omega_8\omega_5\omega_6 - 6\omega_7\omega_5\omega_6 - \omega_7\omega_8\omega_5\omega_6 + 6\omega_7\omega_5 + 6\omega_7\omega_6)\frac{c_s^2\delta_l^3\rho v_1}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + \\
&C_{11}\frac{v_3\delta_l^3 v_1}{12\omega_{11}\omega_{18}\omega_6\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_{12}\frac{v_3\delta_l^3\rho}{6\omega_{18}\omega_6^2\delta_t}\frac{\partial^3 v_1}{\partial x_3^3} + C_{13}\frac{\delta_l^3\rho v_1}{12\omega_{11}\omega_{18}\omega_6\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + C_{14}\frac{\delta_l^4 v_1}{12\omega_9^3\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C_{15}\frac{\delta_l^4\rho}{12\omega_9^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + \\
&C_{16}\frac{\delta_l^4 v_2}{4\omega_5^2\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C_{17}\frac{\delta_l^4\rho v_2 v_1}{4\omega_5^2\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{18}\frac{\delta_l^4\rho}{12\omega_5^3\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{19}\frac{\delta_l^4 v_1}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + \\
&C_{20}\frac{\delta_l^4\rho}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{21}\frac{\delta_l^4\rho v_2 v_1}{2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{22}\frac{\delta_l^4 v_2}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + \\
&C_{23}\frac{\delta_l^4\rho v_2 v_1}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{24}\frac{\delta_l^4\rho}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{25}\frac{\delta_l^4 v_1}{24\omega_{10}^2\omega_5^2\omega_{15}^2\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C_{26}\frac{\delta_l^4\rho}{24\omega_5^3\omega_{15}^2\delta_t}\frac{\partial^4 v_1}{\partial x_2^4} + \\
&C_{27}\frac{\delta_l^4\rho v_2 v_1}{12\omega_{10}^2\omega_5^2\omega_{15}^2\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C_{28}\frac{v_3\delta_l^4}{4\omega_{13}^2\omega_9^3\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{29}\frac{v_3\delta_l^4\rho v_1}{4\omega_{13}^2\omega_9^3\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{30}\frac{\delta_l^4\rho}{12\omega_{13}^2\omega_9^3\omega_6^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C_{31}\frac{v_3\delta_l^4 v_2 v_1}{\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{32}\frac{v_3\delta_l^4\rho v_2}{\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{33}\frac{v_3\delta_l^4\rho v_1}{2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{34}\frac{\delta_l^4\rho v_2 v_1}{2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{35}\frac{2v_3c_s^4\delta_l^4}{\omega_8^2\omega_5^3\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{36}\frac{v_3c_s^2\delta_l^4\rho v_1}{2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{37}\frac{v_3c_s^2\delta_l^4\rho v_2}{\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C_{38}\frac{c_s^2\delta_l^4\rho}{12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{39}\frac{v_3\delta_l^4 v_2 v_1}{4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\delta_t\omega_{16}}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} \\
&+ C_{40}\frac{v_3\delta_l^4\rho v_2}{2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_2^3\partial x_3} + C_{41}\frac{v_3\delta_l^4\rho v_1}{4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\delta_t\omega_{16}}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{42}\frac{\delta_l^4\rho v_2 v_1}{12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\delta_t\omega_{16}}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + \\
&C_{43}\frac{\delta_l^4 v_1}{12\omega_{13}^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{44}\frac{\delta_l^4\rho}{12\omega_{13}^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{45}\frac{v_3\delta_l^4\rho v_1}{2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + \\
&C_{46}\frac{\delta_l^4}{2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C_{47}\frac{\delta_l^4\rho}{2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{48}\frac{\delta_l^4\rho}{12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{49}\frac{v_3\delta_l^4\rho}{\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{50}\frac{\delta_l^4}{12\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{51}\frac{\delta_l^4\rho}{4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} + \\
&C_{52}\frac{\delta_l^4\rho v_2}{2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\delta_t\omega_{16}}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{53}\frac{\delta_l^4\rho}{4\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + \\
&C_{54}\frac{v_3\delta_l^4}{12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{55}\frac{v_3\delta_l^4\rho v_1}{12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{56}\frac{\delta_l^4\rho}{12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + \\
&C_{57}\frac{v_3\delta_l^4 v_2 v_1}{4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{58}\frac{v_3\delta_l^4\rho v_2}{2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_2\partial x_3^3} + C_{59}\frac{v_3\delta_l^4\rho v_1}{12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&C_{60}\frac{\delta_l^4\rho v_2 v_1}{4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{61}\frac{\delta_l^4 v_1}{24\omega_{11}^2\omega_{18}^2\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{62}\frac{\delta_l^4\rho}{24\omega_{18}^2\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_3^4} + C_{63}\frac{v_3\delta_l^4\rho v_1}{12\omega_{11}^2\omega_{18}^2\omega_6^2\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$
C_1 = -c_s^2\omega_9^2 - 144c_s^2\omega_9v_1^2 - 12c_s^2 + 12c_s^2\omega_9 + 36\omega_9v_1^2 + 36v_1^4 + 7\omega_9^2v_1^4 + c_s^4\omega_9^2 - 36\omega_9v_1^4 - 7\omega_9^2v_1^2 + 144c_s^2v_1^2 - 36v_1^2 + 24c_s^2\omega_9^2v_1^2 - 12c_s^4\omega_9 + 12c_s^4
$$

$$
C_2 = 3c_s^2\omega_5\omega_{12} + \omega_9\omega_{12}v_1^2 + 3c_s^2\omega_9\omega_{12} + \omega_9^2 - 3c_s^2\omega_9^2 + \omega_5\omega_9^2v_1^2 - \omega_9\omega_{12} - 3c_s^2\omega_5\omega_9\omega_{12} - \omega_5\omega_{12} + \omega_5\omega_{12}v_1^2 + \omega_5\omega_9 + 3c_s^2\omega_5\omega_9^2 - \omega_5\omega_9v_1^2 - \omega_9^2v_1^2 + \omega_5\omega_9\omega_{12} - \omega_5\omega_9\omega_{12}v_1^2 - \omega_5\omega_9^2 - 3c_s^2\omega_5\omega_9
$$

$$
C_3 = c_s^2\omega_5\omega_{12} + 3\omega_9\omega_{12}v_1^2 + c_s^2\omega_9\omega_{12} + \omega_9^2 - c_s^2\omega_9^2 + 3\omega_5\omega_9^2v_1^2 - \omega_9\omega_{12} - c_s^2\omega_5\omega_9\omega_{12} - \omega_5\omega_{12} + 3\omega_5\omega_{12}v_1^2 + \omega_5\omega_9 + c_s^2\omega_5\omega_9^2 - 3\omega_5\omega_9v_1^2 - 3\omega_9^2v_1^2 + \omega_5\omega_9\omega_{12} - 3\omega_5\omega_9\omega_{12}v_1^2 - \omega_5\omega_9^2 - c_s^2\omega_5\omega_9
$$

$$
C_4 = 6\omega_5\omega_9^2\omega_{12}v_1^2 - 12\omega_5^2\omega_9^2 - 12c_s^2\omega_5^2\omega_9 - 12\omega_5\omega_9^2v_1^2 - 6\omega_5^2\omega_9\omega_{12}v_1^2 - 24c_s^2\omega_5\omega_9\omega_{12} - 6\omega_5\omega_9^2\omega_{12} - 12\omega_5^2\omega_9v_1^2 + 12\omega_5^2\omega_9 + 12c_s^2\omega_5^2\omega_9^2 - 11c_s^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_5^2\omega_9\omega_{12} - 12\omega_5^2\omega_{12} - 12c_s^2\omega_5\omega_9^2 + 12\omega_5^2\omega_9^2v_1^2 - 18c_s^2\omega_5^2\omega_9\omega_{12} + 3\omega_5^2\omega_9^2\omega_{12} - 3\omega_5^2\omega_9^2\omega_{12}v_1^2 + 12\omega_5^2\omega_{12}v_1^2 + 42c_s^2\omega_5\omega_9^2\omega_{12} - 24c_s^2\omega_9^2\omega_{12} + 36c_s^2\omega_5^2\omega_{12} + 12\omega_5\omega_9^2
$$

$$
C_5 = -36\omega_{10}c_s^2 + 12\omega_{10} + 12\omega_{15}v_2^2 + 6\omega_{10}\omega_5v_2^2 + 36c_s^2\omega_{15} - 12\omega_{15} - 12\omega_{10}v_2^2 - \omega_{10}\omega_5\omega_{15} + 6\omega_5\omega_{15} - 18c_s^2\omega_5\omega_{15} + 18\omega_{10}c_s^2\omega_5 + 3\omega_{10}c_s^2\omega_5\omega_{15} - 6\omega_{10}\omega_5 + \omega_{10}\omega_5\omega_{15}v_2^2 - 6\omega_5\omega_{15}v_2^2
$$

$$
C_6 = -3c_s^2\omega_5^2\omega_{15} - \omega_5^2\omega_{15}v_2^2 - 6\omega_5v_2^2 + \omega_5^2\omega_{15} - 12c_s^2\omega_{15} + 6\omega_5 + 3\omega_5^2v_2^2 - 3\omega_5^2 + 3c_s^2\omega_5^2 - 3\omega_5\omega_{15} + 15c_s^2\omega_5\omega_{15} - 6c_s^2\omega_5 + 3\omega_5\omega_{15}v_2^2
$$

$$
C_7 = -12\omega_{10}c_s^2 + 12\omega_{10} + 36\omega_{15}v_2^2 + 18\omega_{10}\omega_5v_2^2 + 12c_s^2\omega_{15} - 12\omega_{15} - 36\omega_{10}v_2^2 - \omega_{10}\omega_5\omega_{15} + 6\omega_5\omega_{15} - 6c_s^2\omega_5\omega_{15} + 6\omega_{10}c_s^2\omega_5 + \omega_{10}c_s^2\omega_5\omega_{15} - 6\omega_{10}\omega_5 + 3\omega_{10}\omega_5\omega_{15}v_2^2 - 18\omega_5\omega_{15}v_2^2
$$

$$
C_8 = 3\omega_{13}c_s^2\omega_6 + \omega_{13}\omega_6v_1^2 - \omega_{13}\omega_9 - 3c_s^2\omega_9\omega_6 - \omega_9\omega_6v_1^2 + \omega_9^2 - 3c_s^2\omega_9^2 - 3\omega_{13}c_s^2\omega_9\omega_6 - \omega_{13}\omega_9\omega_6v_1^2 + \omega_9\omega_6 - \omega_9^2\omega_6 - \omega_9^2v_1^2 + 3c_s^2\omega_9^2\omega_6 - \omega_{13}\omega_6 + \omega_{13}\omega_9v_1^2 + \omega_{13}\omega_9\omega_6 + \omega_9^2\omega_6v_1^2 + 3\omega_{13}c_s^2\omega_9
$$

$C_9 = \omega_{13}c_s^2\omega_6 + 3\omega_{13}\omega_6 v_1^2 - \omega_{13}\omega_9 - c_s^2\omega_9\omega_6 - 3\omega_9\omega_6 v_1^2 + \omega_9^2 - c_s^2\omega_9^2 - \omega_{13}c_s^2\omega_9\omega_6 - 3\omega_{13}\omega_9\omega_6 v_1^2 + \omega_9\omega_6 - \omega_9^2\omega_6 - 3\omega_9^2 v_1^2 + c_s^2\omega_9^2\omega_6 - \omega_{13}\omega_6 + 3\omega_{13}\omega_9 v_1^2 + \omega_{13}\omega_9\omega_6 + 3\omega_9^2\omega_6 v_1^2 + \omega_{13}c_s^2\omega_9$

$C_{10} = 12\omega_9^2\omega_6^2 v_1^2 - 6\omega_{13}\omega_9^2\omega_6 + 12\omega_9\omega_6^2 - 18\omega_{13}c_s^2\omega_9\omega_6^2 - 24\omega_{13}c_s^2\omega_9\omega_6 - 12c_s^2\omega_9\omega_6^2 - 3\omega_{13}\omega_9^2\omega_6^2 v_1^2 + 3\omega_{13}\omega_9^2\omega_6^2 + 36\omega_{13}c_s^2\omega_6^2 + 6\omega_{13}\omega_9\omega_6^2 - 24\omega_{13}c_s^2\omega_9^2 + 6\omega_{13}\omega_9^2\omega_6 v_1^2 - 6\omega_{13}\omega_9\omega_6^2 v_1^2 + 12\omega_9^2\omega_6 + 12c_s^2\omega_9^2\omega_6^2 + 42\omega_{13}c_s^2\omega_9^2\omega_6 - 12\omega_{13}\omega_6^2 - 12\omega_9\omega_6^2 v_1^2 - 11\omega_{13}c_s^2\omega_9^2\omega_6^2 - 12\omega_9^2\omega_6^2 - 12c_s^2\omega_9^2\omega_6 + 12\omega_{13}\omega_6^2 v_1^2 - 12\omega_9^2\omega_6 v_1^2$

$C_{11} = v_3^2\omega_{11}\omega_{18}\omega_6 + 36c_s^2\omega_{18} - 12v_3^2\omega_{11} + 12\omega_{11} - \omega_{11}\omega_{18}\omega_6 - 18c_s^2\omega_{18}\omega_6 - 36c_s^2\omega_{11} + 3c_s^2\omega_{11}\omega_{18}\omega_6 - 12\omega_{18} + 12v_3^2\omega_{18} + 18c_s^2\omega_{11}\omega_6 - 6\omega_{11}\omega_6 - 6v_3^2\omega_{18}\omega_6 + 6\omega_{18}\omega_6 + 6v_3^2\omega_{11}\omega_6$

$C_{12} = -6v_3^2\omega_6 - 12c_s^2\omega_{18} + 3v_3^2\omega_6^2 + \omega_{18}\omega_6^2 + 15c_s^2\omega_{18}\omega_6 - 6c_s^2\omega_6 - v_3^2\omega_{18}\omega_6^2 + 3c_s^2\omega_6^2 + 6\omega_6 + 3v_3^2\omega_{18}\omega_6 - 3\omega_6^2 - 3\omega_{18}\omega_6 - 3c_s^2\omega_{18}\omega_6^2$

$C_{13} = 3v_3^2\omega_{11}\omega_{18}\omega_6 + 12c_s^2\omega_{18} - 36v_3^2\omega_{11} + 12\omega_{11} - \omega_{11}\omega_{18}\omega_6 - 6c_s^2\omega_{18}\omega_6 - 12c_s^2\omega_{11} + c_s^2\omega_{11}\omega_{18}\omega_6 - 12\omega_{18} + 36v_3^2\omega_{18} + 6c_s^2\omega_{11}\omega_6 - 6\omega_{11}\omega_6 - 18v_3^2\omega_{18}\omega_6 + 6\omega_{18}\omega_6 + 18v_3^2\omega_{11}\omega_6$

$C_{14} = 12 + 6c_s^2\omega_9^3 - \omega_9^3 - 9\omega_9^3 v_1^4 + 8\omega_9^2 - 78c_s^2\omega_9^2 - 1008c_s^2\omega_9 v_1^2 - 132c_s^2 + 198c_s^2\omega_9 + 234\omega_9 v_1^2 + 144v_1^4 + 90\omega_9^2 v_1^4 - 34c_s^2\omega_9^3 v_1^2 + 82c_s^4\omega_9^2 - 216\omega_9 v_1^4 - 98\omega_9^2 v_1^2 + 672c_s^2 v_1^2 - 156v_1^2 - 18\omega_9 - 5c_s^4\omega_9^3 + 404c_s^2\omega_9^2 v_1^2 - 216c_s^4\omega_9 + 144c_s^4 + 10\omega_9^3 v_1^2$

$C_{15} = 12 + 2c_s^2\omega_9^3 - \omega_9^3 - 29\omega_9^3 v_1^4 + 8\omega_9^2 - 22c_s^2\omega_9^2 - 648c_s^2\omega_9 v_1^2 - 36c_s^2 + 54c_s^2\omega_9 + 378\omega_9 v_1^2 + 504v_1^4 + 310\omega_9^2 v_1^4 - 18c_s^2\omega_9^3 v_1^2 + 14c_s^4\omega_9^2 - 756\omega_9 v_1^4 - 154\omega_9^2 v_1^2 + 432c_s^2 v_1^2 - 252v_1^2 - 18\omega_9 - c_s^4\omega_9^3 + 252c_s^2\omega_9^2 v_1^2 - 36c_s^4\omega_9 + 24c_s^4 + 14\omega_9^3 v_1^2$

$C_{16} = -4c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 16\omega_5\omega_9^2\omega_{12} v_1^2 + 4\omega_5^2\omega_9^3 v_1^4 + 4c_s^4\omega_5^2\omega_9^3 + 4\omega_5\omega_9^3 v_1^2 - 4c_s^4\omega_5^2\omega_9\omega_{12} - 20\omega_5\omega_9\omega_{12}^2 v_1^2 - 4c_s^2\omega_5\omega_9\omega_{12}^2 - 84c_s^2\omega_5\omega_9^2\omega_{12}^2 v_1^2 - 4c_s^4\omega_5^2\omega_9^2 + 4c_s^2\omega_5^2\omega_9^3\omega_{12} + 13\omega_5^2\omega_9^3\omega_{12} v_1^2 + 24c_s^2\omega_5^2\omega_9^3 v_1^2 - 20\omega_5\omega_9^2\omega_{12}^2 v_1^4 - 8\omega_9^2\omega_{12}^2 v_1^2 - 4c_s^2\omega_5^2\omega_9^3 - 8c_s^4\omega_5\omega_9^2\omega_{12}^2 + 32\omega_5^2\omega_9^2\omega_{12} v_1^4 - 24\omega_5^2\omega_{12}^2 v_1^2 + 120c_s^2\omega_5^2\omega_9^2\omega_{12} v_1^2 + 20\omega_5^2\omega_9\omega_{12} v_1^2 - 4\omega_5^2\omega_9^2 v_1^4 - 36\omega_5^2\omega_9\omega_{12}^2 v_1^4 + 20\omega_5\omega_9^3\omega_{12} v_1^4 - 24c_s^2\omega_5^2\omega_9^2 v_1^2 + 8c_s^4\omega_5\omega_9^3\omega_{12} + 8\omega_9^3\omega_{12} v_1^2 - 12c_s^4\omega_5^2\omega_9\omega_{12}^2 + 4c_s^2\omega_5^2\omega_9^2 - 8c_s^2\omega_5^2\omega_9^2\omega_{12} + 84c_s^2\omega_5\omega_9^3\omega_{12} v_1^2 - 13\omega_5^2\omega_9^2\omega_{12}^2 v_1^2 - 144c_s^2\omega_5^2\omega_9\omega_{12}^2 v_1^2 + 24\omega_5^2\omega_{12}^2 v_1^4 - 8c_s^2\omega_5^2\omega_{12}^2 - 20\omega_5^2\omega_9\omega_{12} v_1^4 + 4c_s^4\omega_5^2\omega_9^2\omega_{12}^2 - 36c_s^2\omega_9^3\omega_{12} v_1^2 + 4\omega_5^2\omega_9^2 v_1^2 + 4c_s^2\omega_5^2\omega_9\omega_{12} - 72c_s^2\omega_5^2\omega_9\omega_{12} v_1^2 - 32\omega_5^2\omega_9^2\omega_{12} v_1^2 + 4c_s^2\omega_9^3\omega_{12} - 4c_s^4\omega_5^2\omega_9^3\omega_{12} + 4c_s^4\omega_5\omega_9\omega_{12}^2 + 4c_s^2\omega_5\omega_9^3 + 13\omega_5^2\omega_9^2\omega_{12}^2 v_1^4 + 36\omega_5^2\omega_9\omega_{12}^2 v_1^2 + 51c_s^2\omega_5^2\omega_9^2\omega_{12}^2 v_1^2 - 20\omega_5\omega_9^3\omega_{12} v_1^2 + 96c_s^2\omega_5^2\omega_{12}^2 v_1^2 - 4c_s^2\omega_9^2\omega_{12}^2 - 8\omega_9^3\omega_{12} v_1^4 + 8c_s^4\omega_5^2\omega_{12}^2 - 4\omega_5\omega_9^3 v_1^4 - 48c_s^2\omega_5\omega_9^2\omega_{12} v_1^2 + 8c_s^2\omega_5\omega_9^2\omega_{12}^2 - 16\omega_5\omega_9^2\omega_{12} v_1^4 - 4\omega_5^2\omega_9^3 v_1^2 - 4c_s^4\omega_9^3\omega_{12} + 36c_s^2\omega_9^2\omega_{12}^2 v_1^2 - 4c_s^4\omega_5\omega_9^3 - 51c_s^2\omega_5^2\omega_9^3\omega_{12} v_1^2 + 20\omega_5\omega_9^2\omega_{12}^2 v_1^2 + 12c_s^2\omega_5^2\omega_9\omega_{12}^2 + 72c_s^2\omega_5\omega_9\omega_{12}^2 v_1^2 - 8c_s^2\omega_5\omega_9^3\omega_{12} + 8\omega_9^2\omega_{12}^2 v_1^4 + 4c_s^4\omega_9^2\omega_{12}^2 + 20\omega_5\omega_9\omega_{12}^2 v_1^4 + 8c_s^4\omega_5^2\omega_9^2\omega_{12} - 13\omega_5^2\omega_9^3\omega_{12} v_1^4 - 24c_s^2\omega_5\omega_9^3 v_1^2$

$C_{17} = -28\omega_5\omega_9^3\omega_{12} + 48\omega_5^2\omega_9\omega_{12}^2 + 25c_s^2\omega_5^2\omega_9^2\omega_{12}^2 - 48\omega_5\omega_9^2\omega_{12} v_1^2 - 16\omega_5\omega_9^3 v_1^2 + 8\omega_5^2\omega_9^2 + 28\omega_5\omega_9^2\omega_{12}^2 + 64\omega_5\omega_9\omega_{12}^2 v_1^2 + 32c_s^2\omega_5\omega_9\omega_{12}^2 - 25c_s^2\omega_5^2\omega_9^3\omega_{12} - 43\omega_5^2\omega_9^3\omega_{12} v_1^2 - 8\omega_5^2\omega_9^3 + 28\omega_9^2\omega_{12}^2 v_1^2 + 16c_s^2\omega_5^2\omega_9^3 + 80\omega_5^2\omega_{12}^2 v_1^2 - 64\omega_5^2\omega_9\omega_{12} v_1^2 + 16\omega_5\omega_9^2\omega_{12} - 28\omega_9^3\omega_{12} v_1^2 - 16c_s^2\omega_5^2\omega_9^2 + 56c_s^2\omega_5^2\omega_9^2\omega_{12} + 24\omega_5^2\omega_9\omega_{12} + 43\omega_5^2\omega_9^2\omega_{12}^2 v_1^2 + 48c_s^2\omega_5^2\omega_{12}^2 - 16\omega_5^2\omega_9^2 v_1^2 - 32c_s^2\omega_5^2\omega_9\omega_{12} - 40\omega_5^2\omega_9^2\omega_{12} + 104\omega_5^2\omega_9^2\omega_{12} v_1^2 - 20c_s^2\omega_9^3\omega_{12} - 16c_s^2\omega_5\omega_9^3 - 120\omega_5^2\omega_9\omega_{12}^2 v_1^2 + 68\omega_5\omega_9^3\omega_{12} v_1^2 + 20c_s^2\omega_9^2\omega_{12}^2 - 16c_s^2\omega_5\omega_9^2\omega_{12} - 12\omega_9^2\omega_{12}^2 + 17\omega_5^2\omega_9^3\omega_{12} - 24\omega_5\omega_9\omega_{12}^2 - 44c_s^2\omega_5\omega_9^2\omega_{12}^2 + 16\omega_5^2\omega_9^3 v_1^2 + 8\omega_5\omega_9^3 - 17\omega_5^2\omega_9^2\omega_{12}^2 - 68\omega_5\omega_9^2\omega_{12}^2 v_1^2 - 72c_s^2\omega_5^2\omega_9\omega_{12}^2 + 44c_s^2\omega_5\omega_9^3\omega_{12} + 12\omega_9^3\omega_{12} - 32\omega_5^2\omega_{12}^2$

$C_{18} = 252c_s^2\omega_5^3\omega_{12}^2 v_1^2 - 6c_s^2\omega_5^2\omega_9^2\omega_{12}^2 - 81c_s^2\omega_5^2\omega_9^3\omega_{12}^2 v_1^2 - 12\omega_5^2\omega_9^3 v_1^4 - 90\omega_5^3\omega_9\omega_{12}^2 v_1^4 - 19\omega_5^3\omega_9^2\omega_{12}^2 v_1^2 - 306c_s^2\omega_5^3\omega_9\omega_{12}^2 v_1^2 + 6c_s^4\omega_5^3\omega_9^3\omega_{12} - 18\omega_5^2\omega_9^3\omega_{12}^2 v_1^4 - 24c_s^4\omega_5\omega_9^3\omega_{12}^2 + 60\omega_5^3\omega_9^2\omega_{12} v_1^4 - 48c_s^2\omega_5\omega_9^2\omega_{12}^2 v_1^2 + 18c_s^2\omega_5^2\omega_9^3\omega_{12} - 48\omega_5^2\omega_9^3\omega_{12} v_1^2 - 12c_s^2\omega_5^2\omega_9^3 v_1^2 + 72\omega_5^3\omega_{12}^2 v_1^4 + 12\omega_5^3\omega_9^2 v_1^2 + 54c_s^2\omega_5^3\omega_9^2\omega_{12} v_1^2 + 36\omega_5^3\omega_9\omega_{12} v_1^2 + c_s^4\omega_5^3\omega_9^2\omega_{12}^2 + 27\omega_5^3\omega_9^3\omega_{12} v_1^2 - 24\omega_5^2\omega_9^2\omega_{12} v_1^4 - 6c_s^4\omega_5^3\omega_9^2\omega_{12} + 12c_s^2\omega_5^3\omega_9\omega_{12}^2 - 12\omega_5\omega_9^3\omega_{12}^2 v_1^2 - 12c_s^2\omega_5^2\omega_9^2\omega_{12} v_1^2 - 5c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 12\omega_5^3\omega_9^3 v_1^2 - 24\omega_5\omega_9^3\omega_{12} v_1^4 - c_s^4\omega_5^3\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^3\omega_9^3\omega_{12}^2 v_1^2 - 48c_s^2\omega_9^3\omega_{12}^2 v_1^2 + 12c_s^4\omega_5\omega_9^3\omega_{12} - 12c_s^4\omega_5^2\omega_9\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^2\omega_{12} + 4\omega_5^3\omega_9^3\omega_{12}^2 v_1^4 - 12c_s^2\omega_5\omega_9^3\omega_{12} v_1^2 - 12\omega_5^2\omega_9^2\omega_{12}^2 v_1^2 - 108c_s^2\omega_5^2\omega_9\omega_{12}^2 v_1^2 + 12\omega_5\omega_9^3\omega_{12}^2 v_1^4 + 12c_s^2\omega_5^3\omega_9^3 v_1^2 + 6c_s^4\omega_5^2\omega_9^2\omega_{12}^2 - 21c_s^2\omega_5^3\omega_9^3\omega_{12} v_1^2 - 27\omega_5^3\omega_9^3\omega_{12} v_1^4 + 6c_s^2\omega_5\omega_9^3\omega_{12}^2 + 24\omega_5^2\omega_9^2\omega_{12} v_1^2 - 6c_s^2\omega_5^3\omega_9^3\omega_{12} + 102c_s^2\omega_5\omega_9^3\omega_{12}^2 v_1^2 + 12c_s^4\omega_5^3\omega_{12}^2 - 18c_s^4\omega_5^2\omega_9^3\omega_{12} - 4\omega_5^3\omega_9^3\omega_{12}^2 v_1^2 + 12c_s^4\omega_9^3\omega_{12}^2 + 12\omega_5^2\omega_9^2\omega_{12}^2 v_1^4 + 12\omega_5^3\omega_9^3 v_1^4 + 162c_s^2\omega_5^2\omega_9^2\omega_{12}^2 v_1^2 + 24\omega_5\omega_9^3\omega_{12} v_1^2 - c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 19\omega_5^3\omega_9^2\omega_{12}^2 v_1^4 + 6c_s^2\omega_5^3\omega_9^2\omega_{12} + 18\omega_5^2\omega_9^3\omega_{12}^2 v_1^2 + 13c_s^4\omega_5^2\omega_9^3\omega_{12}^2 + 12\omega_5^2\omega_9^3 v_1^2 - 12c_s^4\omega_5^3\omega_9\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{12}^2 + 90\omega_5^3\omega_9\omega_{12}^2 v_1^2 - 12c_s^2\omega_5^3\omega_9^2 v_1^2 + 60c_s^2\omega_5^3\omega_9^2\omega_{12}^2 v_1^2 + 30c_s^2\omega_5^3\omega_9^3\omega_{12} v_1^2 + 12c_s^2\omega_5^2\omega_9\omega_{12}^2 - 72\omega_5^3\omega_{12}^2 v_1^2 - 12c_s^2\omega_5\omega_9^3\omega_{12} - 12\omega_5^3\omega_9^2 v_1^4 - 36\omega_5^3\omega_9\omega_{12} v_1^4 - 36c_s^2\omega_5^3\omega_9\omega_{12} v_1^2 - 60\omega_5^3\omega_9^2\omega_{12} v_1^2 + 12c_s^4\omega_5^2\omega_9^2\omega_{12} + 48\omega_5^2\omega_9^3\omega_{12} v_1^4$

$C_{19} = 108c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} v_2^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 v_1^2 + 72c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} v_2^2 - 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9^3\omega_{12}^2 v_1^2 + 6c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 v_1^2 - 36c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} v_2^2 - 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 v_1^2 - 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_1^2 + 36c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 24\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} v_2^2 v_1^2 - 24\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_2^2 - 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 6\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_2^2 v_1^2 + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 18\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 v_2^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 v_1^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 88c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 6\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 v_2^2 v_1^2 + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 36c_s^4\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 18c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^3 v_2^2 + 180c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 54c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 v_2^2 - 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 12\omega_5^3\omega_{15}\omega_9^2\omega_{12} v_2^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 6c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_5^2\omega_{15}\omega_9^3\omega_{12} v_2^2 v_1^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 72c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_2^2 + 36c_s^2\omega_5^2\omega_9^3\omega_{12}^2 v_2^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} v_2^2 - 12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} v_1^2 - 36c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 v_2^2 - 24\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} v_2^2 + 18c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 v_2^2 + 36c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} v_1^2 + 36c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 v_2^2 + 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} v_1^2 + 150c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_5^2\omega_{15}\omega_9^3\omega_{12} v_2^2 - 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 12\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 v_2^2 v_1^2 + 6\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 v_2^2 v_1^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2 v_2^2 v_1^2 - 36c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 18c_s^4\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9^3 v_2^2 v_1^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_2^2 - 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 12\omega_5^3\omega_{15}\omega_9^2\omega_{12} v_2^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 6c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_5^2\omega_{15}\omega_9^3\omega_{12} v_2^2 v_1^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 72c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_2^2 + 36c_s^2\omega_5^2\omega_9^3\omega_{12}^2 v_2^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} v_2^2 - 12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} v_1^2 - 36c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 v_2^2 - 24\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} v_2^2 + 18c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 v_2^2 + 36c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} v_1^2 + 36c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 v_2^2 + 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} v_1^2 + 150c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_5^2\omega_{15}\omega_9^3\omega_{12} v_2^2 - 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 12\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 v_2^2 v_1^2 + 6\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 v_2^2 v_1^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2 v_2^2 v_1^2 - 36c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 18c_s^4\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9^3 v_2^2 v_1^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_2^2 - 24\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} v_2^2 - 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 v_2^2 - 24\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_2^2 v_1^2 + 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 18c_s^4\omega_5^3\omega_9^3\omega_{12}^2 - 72c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} v_2^2 - 42c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 6c_s^2\omega_5^3\omega_9^3\omega_{12}^2 v_1^2 + 24\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_2^2 - 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 v_1^2 - 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 v_1^2 + 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_1^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 84c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 18c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 v_2^2 - 36c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 v_2^2 + 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2 v_2^2 - 12\omega_5^3\omega_{15}\omega_9^3\omega_{12} v_2^2 v_1^2 - 6\omega_5^3\omega_9^3\omega_{12}^2 v_2^2 v_1^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 v_1^2 - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 v_1^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} v_2^2 v_1^2 + 12\omega_5^3\omega_{15}\omega_9^3\omega_{12} v_2^2 v_1^2 - 18\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 v_2^2 v_1^2 - 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5^3\omega_{15}\omega_9^3\omega_{12} v_2^2 + 6\omega_5^3\omega_9^3\omega_{12}^2 v_2^2 + 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 v_2^2 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 v_2^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 v_2^2 - 48c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 v_2^2 - 6\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 v_2^2 + 24\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 v_2^2 v_1^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} v_2^2 v_1^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} v_2^2 v_1^2 + 36c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} v_2^2 + 30c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} v_2^2 - 36c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} v_2^2 + 2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 v_2^2 +$

$12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 + 36\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_2^2v_1^2 + 5c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 24\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 - 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2 +$
$36c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 - 36c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 36c_s^4\omega_5^2\omega_9^3\omega_{12}^2 - 2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 -$
$12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_1^2 + 36c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}v_2^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 12c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2v_1^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 36c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2v_2^2 +$
$12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}v_1^2 + 18c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2v_2^2 - 36c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_2^2 + 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 42c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 -$
$c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^3\omega_{12}^2 - 96c_s^4\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2v_2^2v_1^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 12\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 -$
$12\omega_5^2\omega_9^3\omega_{12}^2v_2^2 + 12\omega_5^3\omega_{21}\omega_{15}\omega_9^3v_2^2v_1^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 - 12\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2v_2^2v_1^2 + 6\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2v_2^2v_1^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9^3v_2^2$

$C_{20} = 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_2^2 + 24c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 36c_s^2\omega_5^2\omega_9^3\omega_{12}^2v_1^2 + 18c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2v_1^2 - 12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}v_2^2 -$
$36c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 84c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 + 12c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 72\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_2^2v_1^2 - 24\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 +$
$18\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2v_1^2 + 18\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_1^2 - 4c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} -$
$18\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2v_1^2 - 12c_s^4\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 6c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^3v_2^2 + 18c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 -$
$12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 12\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_2^2 + 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 36\omega_5^2\omega_{15}\omega_9^3\omega_{12}v_2^2v_1^2 +$
$24c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 + 12c_s^2\omega_5^2\omega_9^3\omega_{12}^2v_2^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_2^2 - 36c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}v_1^2 - 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2v_2^2 - 24\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 +$
$6c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2v_2^2 + 12c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 144c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_1^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2v_2^2 - 132c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_1^2 + 24c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$12\omega_5^2\omega_{15}\omega_9^3\omega_{12}v_2^2 + 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 36\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2v_2^2v_1^2 + 18\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2v_2^2v_1^2 - 36\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_2^2v_1^2 -$
$12c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 6c_s^4\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_9^3v_2^2v_1^2 - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 -$
$6c_s^2\omega_5^3\omega_9^3\omega_{12}^2v_2^2 - 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 12c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 60c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_1^2 -$
$36\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 + 36\omega_5^2\omega_9^3\omega_{12}^2v_2^2v_1^2 + 12c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3v_1^2 + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 24\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_2^2 -$
$12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3v_2^2 - 72\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2v_1^2 - 6c_s^4\omega_5^3\omega_9^3\omega_{12}^2 - 24c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_2^2 - 24c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 18c_s^2\omega_5^3\omega_9^3\omega_{12}^2v_1^2 +$
$24\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 18c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 180c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 6c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 48c_s^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 + 12\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2v_2^2 + 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2v_2^2 +$
$12\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_2^2 - 36\omega_5^3\omega_{15}\omega_9^3\omega_{12}v_2^2v_1^2 - 18\omega_5^3\omega_9^3\omega_{12}^2v_2^2v_1^2 - 24c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3v_1^2 + 78c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_1^2 + 60c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_1^2 +$
$12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 12\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_2^2 + 36c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_1^2 - 54\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 - 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$
$12\omega_5^3\omega_{15}\omega_9^3\omega_{12}v_2^2 + 6\omega_5^3\omega_9^3\omega_{12}^2v_2^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2v_2^2 - 108c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_1^2 -$
$12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 - 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_2^2 + 12\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2v_2^2 - 6\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2v_2^2 + 72\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2v_1^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 -$
$36\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_2^2v_1^2 + 12c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_2^2 + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_2^2 +$
$6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3v_2^2 + 84c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 + 108\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_2^2v_1^2 - c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 +$
$72\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 12c_s^4\omega_5^2\omega_9^3\omega_{12}^2 - 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 -$
$42c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 + 24c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_1^2 + 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}v_2^2 + 18c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 36c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2v_1^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 -$
$12c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2v_2^2 + 36c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}v_1^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2v_2^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_2^2 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} +$
$36\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 + 6c_s^2\omega_5^3\omega_9^3\omega_{12}^2 - 12c_s^4\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 36\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2v_2^2v_1^2 + 72c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 12\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 -$
$12\omega_5^2\omega_9^3\omega_{12}^2v_2^2 + 12\omega_5^3\omega_{21}\omega_{15}\omega_9^3v_2^2v_1^2 + 36\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 - 36\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2v_2^2v_1^2 + 18\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2v_2^2v_1^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9^3v_2^2$

$C_{21} = 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 15\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 7\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}v_1^2 + 9\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}v_1^2 - 6\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$2\omega_{10}\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 4\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12} - 2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2 + 11\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3 + 4\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 -$
$2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2v_1^2 - 2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2 + 4\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9^3\omega_{12}^2 - 6\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} -$
$5\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_1^2 + \omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 - 4\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2 + 4c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 4\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} +$
$4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - \omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - \omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3v_1^2 +$
$2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 2\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9^3\omega_{12}^2 - 4\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2v_1^2 + 5\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 3\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2 +$
$26\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 - 9\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} + 4\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12} - 16\omega_{10}c_s^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 - 6\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}v_1^2 -$
$8\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 + 6\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} + 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 4\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}v_1^2 - 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 3\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 2\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3 - 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 + 4\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2 +$
$3\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} + 2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2v_1^2 + 13\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2v_1^2 +$
$12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3v_1^2 - 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 + 4\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} + 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_1^2 + 4\omega_{10}c_s^2\omega_5^2\omega_{15}^2\omega_{15}^3\omega_{12} -$
$\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 4\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}v_1^2 - 4\omega_{10}\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3 - 3\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}v_1^2 -$
$2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}v_1^2 + 2\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2 - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2v_1^2 - 4\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^3\omega_{12} + 4\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}v_1^2 - 4c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 +$
$\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 - 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} + 4\omega_{10}\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 2\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$
$4\omega_{10}c_s^2\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2 - 7\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 8\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3 + 2\omega_{10}\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + \omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2 -$
$\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2v_1^2 + 3\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 2\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 8\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2$

$C_{22} = -6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9v_1^2 + 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 + 18\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 +$
$6\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 + 18\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 18\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}v_1^2 - 36\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2v_1^2 - 24\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 -$
$6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 6\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2v_2^2 - 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9v_1^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9v_2^2v_1^2 +$
$12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 - 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}v_2^2 - 48\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 6\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12}v_1^2 - 12\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}v_1^2 -$
$12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9v_2^2v_1^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9v_2^2 - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 - 18\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12} - 36\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 +$
$12\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12}v_1^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}v_2^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 - 60\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 24\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 -$
$12\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12}v_2^2v_1^2 + 27\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 - 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 24\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 +$
$9\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 + 6\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9v_2^2 - 36\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}v_1^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9v_2^2 +$
$12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9 + 15\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 15\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$45\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2\omega_5^3\omega_{15}^2v_2^2v_1^2 +$
$36\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9 - 36\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 72\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 - 6\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}v_2^2 + 36\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9v_1^2 -$
$18c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 + 36\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9v_1^2 - 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 +$
$18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}v_1^2 + 156\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 42\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} +$

$72\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 54\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9v_2^2v_1^2 + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 + 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2 +$
$12\omega_{10}^2c_s^2\omega_{21}\omega_9\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2 - 72\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9v_2^2 + 24\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 +$
$18\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}v_1^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2v_2^2 + 12\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 36\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 3\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12}v_2^2v_1^2 +$
$48\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 12\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9v_1^2 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}v_1^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}v_2^2 +$
$15\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 12\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 36\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}v_1^2 - 12\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 -$
$18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36\omega_{10}^2c_s^4\omega_5^2\omega_{15}\omega_9\omega_{12} - 18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2v_1^2 - 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 +$
$12\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9v_1^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}v_2^2 + 36\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2v_2^2v_1^2 -$
$18\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 + 12\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}v_1^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 36\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - \omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$12\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2v_1^2 - 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 - 18\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_9\omega_{12} + 36\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2 + 18\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 +$
$36\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}v_1^2 - 9\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 36\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9 + 18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2v_1^2 -$
$96\omega_{10}^2c_s^4\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 - 18\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_1^2 + 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 - 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 -$
$36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 12\omega_{10}^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 - 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_2^2 - 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12} -$
$108\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 144\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9 - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12} +$
$12\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}v_2^2 + 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9v_1^2 + 6\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}v_1^2 + 24\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 - 15\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 +$
$6\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}v_2^2v_1^2 + 36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 + \omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 + 12\omega_{10}^2\omega_5^2\omega_{15}\omega_9v_2^2v_1^2 + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9v_1^2$

$C_{23} = 18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2 + 24\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} +$
$12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 84\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + \omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2 + 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$24\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 48\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 72\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 +$
$6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 + 24\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_2^2 + 90\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$
$66\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 42\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 -$
$12\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}v_2^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2 + 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}v_2^2 +$
$12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 24\omega_{10}^2\omega_5^3\omega_{21}^2\omega_{15}\omega_9\omega_{12}v_2^2 - 24\omega_{10}^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2v_2^2 + 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 -$
$96\omega_{10}^2c_s^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 60\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 48\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} +$
$24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_2^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 - 18\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2 +$
$24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 18\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 18c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 -$
$12\omega_{10}^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 132\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 +$
$12\omega_{10}^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2v_2^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}v_2^2 + 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2 - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2 - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2v_2^2 +$
$72\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 84\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2 +$
$156\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - \omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2 - 24\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 66\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 + 6\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 36\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 -$
$12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2 + 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}v_2^2 -$
$12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 66\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 24\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}$

$C_{24} = -6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9v_1^2 + 36\omega_{10}^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 + 6\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 +$
$18\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 - 48\omega_{10}^2c_s^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 + 6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}v_1^2 - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2v_1^2 -$
$24\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 - 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 18\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 36\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2v_2^2 -$
$12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9v_1^2 - 36\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9v_2^2v_1^2 + 60\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 - 18\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}v_2^2 - 48\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 +$
$6\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12}v_1^2 - 12\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12}v_1^2 - 36\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9v_2^2v_1^2 - 36\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9v_2^2 - 18\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 - 6\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12} -$
$108\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12}v_1^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}v_2^2 - 15\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 - 5\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$24\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 36\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12}v_2^2v_1^2 + 9\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 72\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 +$
$27\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 + 6\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 36\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9v_2^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}v_1^2 + 36\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9v_2^2 +$
$12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9 + 6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 5\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$15\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 18\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 + 30\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + \omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36\omega_{10}^2\omega_5^3\omega_{15}^2v_2^2v_1^2 +$
$12\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9 - 12\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 - 18\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 - 36\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}v_2^2 +$
$12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9v_1^2 - 6c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 36\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9v_1^2 - 15\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 -$
$6\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}v_1^2 + 24\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_1^2 + 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$36\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}v_1^2 + 18\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 -$
$18\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 24\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 18\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9v_2^2v_1^2 + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 +$
$18\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2 - 24\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9v_2^2 + 72\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 +$
$6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}v_1^2 + 36\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2v_2^2 + 36\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - \omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 18\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12}v_2^2v_1^2 +$
$144\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 12\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9v_1^2 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}v_1^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}v_2^2 +$
$15\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}v_1^2 - 36\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$12\omega_{10}^2c_s^4\omega_5^2\omega_{15}\omega_9\omega_{12} + 18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2v_1^2 + 60\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 12\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9v_1^2 + 18\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}v_2^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 36\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2v_2^2v_1^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 +$
$12\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}v_1^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 12\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2v_1^2 - 36\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 -$
$6\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2 + 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 + 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}v_1^2 - 9\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} -$
$12\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9 - 102\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2v_1^2 - 12\omega_{10}^2c_s^4\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 54\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 - 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_1^2 +$
$12c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 - 72\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 - 12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 -$
$18\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_2^2 - 36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 48\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9 - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$36\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}v_2^2 + 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9v_1^2 + 6\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}v_1^2 + 72\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2v_1^2 - 45\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 +$
$18\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}v_2^2v_1^2 + 12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 + 36\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9v_2^2v_1^2 + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9v_1^2$

$$C_{25} = -48\omega_{10}^2\omega_{15}v_2^4 + 48\omega_{10}^2c_s^4\omega_5\omega_{15} - 36\omega_5^2\omega_{15}^2v_2^4 + 96\omega_{10}\omega_5\omega_{15}^2v_2^2 + 14\omega_{10}c_s^4\omega_5^2\omega_{15}^2 - 24\omega_{10}c_s^2\omega_{15}^2 + 432\omega_{10}^2c_s^2\omega_5\omega_{15}v_2^2 - 24\omega_{10}^2c_s^4\omega_{15} + 36\omega_{10}\omega_5^2\omega_{15}^2v_2^4 + 150\omega_{10}c_s^2\omega_5^2\omega_{15}^2v_2^2 - 12c_s^4\omega_5^2\omega_{15}^2 + 24\omega_{10}^2c_s^2\omega_5 - 72\omega_5\omega_{15}^2v_2^2 - 24\omega_{10}\omega_5^2\omega_{15}v_2^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2v_2^2 + 48\omega_{10}\omega_{15}^2v_2^4 - 144c_s^2\omega_5^2\omega_{15}^2v_2^2 - 144\omega_{10}c_s^2\omega_5\omega_{15}v_2^2 - 48\omega_{10}\omega_5\omega_{15}v_2^4 - 48\omega_{10}^2c_s^2\omega_5\omega_{15} - 14\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 24\omega_{10}^2\omega_5v_2^4 + 12c_s^2\omega_5^2\omega_{15}^2 + 72\omega_{10}^2c_s^2\omega_5^2v_2^2 + 3\omega_{10}^2\omega_5^2\omega_{15}^2v_2^2 - 12\omega_{10}^2\omega_5^2v_2^2 - 30\omega_{10}^2\omega_5^2\omega_{15}v_2^4 - 12\omega_{10}^2c_s^2\omega_5^2 - 96\omega_{10}^2\omega_5\omega_{15}v_2^2 + 24\omega_{10}^2\omega_5v_2^2 - 3\omega_{10}^2\omega_5^2\omega_{15}^2v_2^4 - \omega_{10}^2c_s^4\omega_5^2\omega_{15}^2 + 216\omega_{10}c_s^2\omega_{15}^2v_2^2 + 12\omega_{10}^2c_s^2\omega_5^2\omega_{15} + 96\omega_{10}^2\omega_5\omega_{15}v_2^4 + 48\omega_{10}c_s^2\omega_5\omega_{15}^2 + 24\omega_{10}c_s^4\omega_{15}^2 + 24\omega_{10}^2c_s^2\omega_{15} + 12\omega_{10}^2\omega_5^2v_2^4 - 144\omega_{10}^2c_s^2\omega_5v_2^2 - 24c_s^2\omega_5\omega_{15}^2 + 30\omega_{10}^2\omega_5^2\omega_{15}v_2^2 - 24\omega_{10}^2c_s^4\omega_5 - 126\omega_{10}^2c_s^2\omega_5^2\omega_{15}v_2^2 - 36\omega_{10}\omega_5^2\omega_{15}^2v_2^2 + 12\omega_{10}^2c_s^4\omega_5^2 + 72\omega_5\omega_{15}^2v_2^4 + 48\omega_{10}^2\omega_{15}v_2^2 + \omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 + 36\omega_5^2\omega_{15}^2v_2^2 - 96\omega_{10}\omega_5\omega_{15}^2v_2^4 - 432\omega_{10}c_s^2\omega_5\omega_{15}^2v_2^2 - 12\omega_{10}^2c_s^4\omega_5^2\omega_{15} - 216\omega_{10}^2c_s^2\omega_{15}v_2^2 - 48\omega_{10}c_s^4\omega_5\omega_{15}^2 + 48\omega_{10}\omega_5\omega_{15}v_2^2 + 72\omega_{10}c_s^2\omega_5^2\omega_{15}v_2^2 + 24\omega_{10}\omega_5^2\omega_{15}v_2^4 + 288c_s^2\omega_5\omega_{15}^2v_2^2 - 48\omega_{10}\omega_{15}^2v_2^2 + 24c_s^4\omega_5\omega_{15}^2$$

$$C_{26} = -24\omega_5^2\omega_{15}^2v_2^4 + c_s^2\omega_5^3\omega_{15}^2 + 24c_s^4\omega_5^2\omega_{15}^2 - 24c_s^2\omega_5\omega_{15}v_2^2 - 24\omega_5\omega_{15}^2v_2^2 - 48\omega_5\omega_{15}v_2^4 + 24c_s^2\omega_5^2\omega_{15} + 12\omega_5^3v_2^4 - 72c_s^2\omega_5^2\omega_{15}^2v_2^2 + 6c_s^4\omega_5^3\omega_{15} - 72\omega_5^2\omega_{15}v_2^2 - 3c_s^4\omega_5^3\omega_{15}^2 - 18\omega_5^3\omega_{15}v_2^4 - 8c_s^2\omega_5^2\omega_{15}^2 - 12c_s^2\omega_5^3\omega_{15}v_2^2 - 3\omega_5^3\omega_{15}^2v_2^2 - 24c_s^4\omega_5^2\omega_{15} - 24\omega_5^2v_2^4 - 6c_s^2\omega_5^3\omega_{15} - 96c_s^2\omega_{15}^2v_2^2 + 6c_s^2\omega_5^3\omega_{15}^2v_2^2 + 18\omega_5^3\omega_{15}v_2^2 + 24c_s^4\omega_5\omega_{15} + 12c_s^2\omega_5^3v_2^2 + 24c_s^4\omega_{15}^2 + 24\omega_5^2v_2^2 + 3\omega_5^3\omega_{15}^2v_2^4 + 12c_s^2\omega_5\omega_{15}^2 - 24c_s^2\omega_5\omega_{15} + 24\omega_5\omega_{15}^2v_2^4 - 24c_s^2\omega_5^2v_2^2 + 48c_s^2\omega_5^2\omega_{15}v_2^2 + 24\omega_5^2\omega_{15}^2v_2^2 + 72\omega_5^2\omega_{15}v_2^4 + 156c_s^2\omega_5\omega_{15}^2v_2^2 + 48\omega_5\omega_{15}v_2^2 - 12\omega_5^3v_2^2 - 48c_s^4\omega_5\omega_{15}^2$$

$$C_{27} = 24\omega_{10}^2\omega_5 - 168\omega_{10}\omega_5\omega_{15}^2v_2^2 + 60\omega_{10}c_s^2\omega_{15}^2 - 48\omega_{10}^2c_s^2\omega_5 + 120\omega_5\omega_{15}^2v_2^2 + 36\omega_{10}\omega_5^2\omega_{15}v_2^2 - 25\omega_{10}\omega_5^2\omega_{15}^2 + 24\omega_5^2\omega_{15}^2 - 36\omega_{10}\omega_{15}^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{15} + 120\omega_{10}^2c_s^2\omega_5\omega_{15} + 39\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 12\omega_{10}\omega_5^2\omega_{15} - 36c_s^2\omega_5^2\omega_{15}^2 - 5\omega_{10}^2\omega_5^2\omega_{15}^2v_2^2 + 24\omega_{10}^2\omega_5^2v_2^2 + 24\omega_{10}^2c_s^2\omega_5^2 - 12\omega_{10}^2\omega_5^2 + 168\omega_{10}^2\omega_5\omega_{15}v_2^2 - 72\omega_{10}^2\omega_5\omega_{15} - 48\omega_{10}^2\omega_5v_2^2 + 21\omega_{10}^2\omega_5^2\omega_{15} - 33\omega_{10}^2c_s^2\omega_5^2\omega_{15} - 120\omega_{10}c_s^2\omega_5\omega_{15}^2 + 36\omega_{10}^2\omega_{15} - 60\omega_{10}^2c_s^2\omega_{15} + 24\omega_{10}\omega_5\omega_{15} + 72c_s^2\omega_5\omega_{15}^2 - 51\omega_{10}^2\omega_5^2\omega_{15}v_2^2 + 72\omega_{10}\omega_5\omega_{15}^2 + 61\omega_{10}\omega_5^2\omega_{15}^2v_2^2 - 48\omega_5\omega_{15}^2 - 84\omega_{10}^2\omega_{15}v_2^2 - 3\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 - 60\omega_5^2\omega_{15}^2v_2^2 - 24\omega_{10}c_s^2\omega_5\omega_{15} + 2\omega_{10}^2\omega_5^2\omega_{15}^2 - 72\omega_{10}\omega_5\omega_{15}v_2^2 + 84\omega_{10}\omega_{15}^2v_2^2$$

$$C_{28} = -4\omega_{13}c_s^4\omega_9^3 + 72\omega_{13}^2c_s^2\omega_9\omega_6v_1^2 + 4\omega_{13}^2c_s^4\omega_9^2\omega_6^2 + 20\omega_{13}^2\omega_9\omega_6v_1^4 + 8\omega_{13}^2\omega_9^2v_1^4 - 13\omega_{13}\omega_9^3\omega_6^2v_1^4 + 20\omega_{13}^2\omega_9^2\omega_6v_1^2 + 4\omega_9^2\omega_6^2v_1^2 + 120\omega_{13}c_s^2\omega_9^2\omega_6^2v_1^2 + 8\omega_{13}^2c_s^4\omega_6^2 - 24\omega_{13}^2\omega_6^2v_1^2 + 13\omega_{13}^2\omega_9^2\omega_6^2v_1^4 + 51\omega_{13}^2c_s^2\omega_9^2\omega_6^2v_1^2 + 4\omega_{13}c_s^2\omega_9\omega_6^2 + 36\omega_{13}^2c_s^2\omega_9^2v_1^2 - 20\omega_{13}\omega_9^3\omega_6v_1^2 + 36\omega_{13}^2\omega_9\omega_6^2v_1^2 + 8\omega_{13}^2c_s^2\omega_9^2\omega_6 - 4\omega_{13}^2c_s^2\omega_9^2 + 4\omega_9^3\omega_6v_1^2 + 24c_s^2\omega_9^3\omega_6^2v_1^2 + 84\omega_{13}c_s^2\omega_9^3\omega_6v_1^2 - 4\omega_{13}^2c_s^2\omega_9^2\omega_6^2 + 8\omega_{13}\omega_9^3v_1^2 - 16\omega_{13}\omega_9^2\omega_6v_1^4 - 32\omega_{13}\omega_9^2\omega_6^2v_1^2 - 20\omega_{13}\omega_9\omega_6^2v_1^4 - 4\omega_{13}c_s^4\omega_9\omega_6^2 - 8\omega_{13}^2c_s^4\omega_9^2\omega_6 + 4\omega_9^3\omega_6^2v_1^4 + 4c_s^2\omega_9^3\omega_6 + 16\omega_{13}\omega_9^2\omega_6v_1^2 + 4\omega_{13}c_s^2\omega_9^3\omega_6^2 + 8\omega_{13}c_s^4\omega_9^2\omega_6^2 - 4\omega_9^3\omega_6v_1^4 - 8\omega_{13}\omega_9^3v_1^4 + 4\omega_{13}^2c_s^4\omega_9\omega_6 + 4\omega_{13}c_s^2\omega_9^3 + 20\omega_{13}\omega_9\omega_6^2v_1^2 + 4c_s^2\omega_9^2\omega_6^2 + 12\omega_{13}^2c_s^2\omega_9\omega_6^2 - 51\omega_{13}c_s^2\omega_9^3\omega_6^2v_1^2 - 4\omega_9^3\omega_6^2v_1^2 - 24c_s^2\omega_9^3\omega_6v_1^2 + 32\omega_{13}\omega_9^2\omega_6^2v_1^4 + 8\omega_{13}c_s^4\omega_9^3\omega_6 + 4c_s^4\omega_9^3\omega_6^2 - 8\omega_{13}^2c_s^2\omega_6^2 - 20\omega_{13}^2\omega_9^2\omega_6v_1^4 - 4c_s^4\omega_9^3\omega_6 - 4\omega_9^2\omega_6^2v_1^4 - 84\omega_{13}^2c_s^2\omega_9^2\omega_6v_1^2 - 4\omega_{13}c_s^4\omega_9^3\omega_6^2 + 96\omega_{13}^2c_s^2\omega_6^2v_1^2 - 72\omega_{13}c_s^2\omega_9\omega_6^2v_1^2 - 8\omega_{13}c_s^2\omega_9^2\omega_6^2 - 4\omega_{13}^2c_s^2\omega_9\omega_6 - 8\omega_{13}^2\omega_9^2v_1^2 - 20\omega_{13}^2\omega_9\omega_6v_1^2 + 13\omega_{13}\omega_9^3\omega_6^2v_1^2 - 4c_s^4\omega_9^2\omega_6^2 + 4\omega_{13}^2c_s^4\omega_9^2 - 144\omega_{13}^2c_s^2\omega_9\omega_6^2v_1^2 + 20\omega_{13}\omega_9^3\omega_6v_1^4 - 36\omega_{13}^2\omega_9\omega_6^2v_1^4 - 12\omega_{13}^2c_s^4\omega_9\omega_6^2 - 13\omega_{13}^2\omega_9^2\omega_6^2v_1^2 + 24\omega_{13}^2\omega_6^2v_1^4 - 36\omega_{13}c_s^2\omega_9^3v_1^2 - 48\omega_{13}c_s^2\omega_9^2\omega_6v_1^2 - 8\omega_{13}c_s^2\omega_9^3\omega_6 - 4c_s^2\omega_9^3\omega_6^2 - 24c_s^2\omega_9^2\omega_6^2v_1^2$$

$$C_{29} = -68\omega_{13}^2\omega_9^2\omega_6v_1^2 - 16\omega_9^2\omega_6^2v_1^2 + 16\omega_{13}\omega_9^2\omega_6 + 80\omega_{13}^2\omega_6^2v_1^2 - 32\omega_{13}c_s^2\omega_9\omega_6^2 + 17\omega_{13}\omega_9^3\omega_6^2 - 24\omega_{13}^2\omega_9\omega_6 + 68\omega_{13}\omega_9^3\omega_6v_1^2 - 120\omega_{13}^2\omega_9\omega_6^2v_1^2 - 44\omega_{13}^2c_s^2\omega_9^2\omega_6 + 20\omega_{13}^2c_s^2\omega_9^2 + 48\omega_{13}^2\omega_9\omega_6^2 - 28\omega_{13}\omega_9^3\omega_6 - 16\omega_9^3\omega_6v_1^2 - 32\omega_{13}^2\omega_6^2 + 25\omega_{13}^2c_s^2\omega_9^2\omega_6^2 - 28\omega_{13}\omega_9^3v_1^2 + 104\omega_{13}\omega_9^2\omega_6^2v_1^2 - 40\omega_{13}\omega_9^2\omega_6^2 + 12\omega_{13}\omega_9^3 + 24\omega_{13}\omega_9\omega_6^2 - 8\omega_9^3\omega_6^2 - 16c_s^2\omega_9^3\omega_6 - 48\omega_{13}\omega_9^2\omega_6v_1^2 - 25\omega_{13}c_s^2\omega_9^3\omega_6^2 - 20\omega_{13}c_s^2\omega_9^3 - 17\omega_{13}^2\omega_9^2\omega_6^2 - 64\omega_{13}\omega_9\omega_6^2v_1^2 - 16c_s^2\omega_9^2\omega_6^2 - 16\omega_{13}c_s^2\omega_9^2\omega_6 - 72\omega_{13}^2c_s^2\omega_9\omega_6^2 + 16\omega_9^3\omega_6^2v_1^2 - 12\omega_{13}^2\omega_9^3 + 48\omega_{13}^2c_s^2\omega_6^2 + 28\omega_{13}^2\omega_9^2\omega_6 + 56\omega_{13}c_s^2\omega_9^2\omega_6^2 + 8\omega_9^2\omega_6^2 + 32\omega_{13}^2c_s^2\omega_9\omega_6 + 28\omega_{13}^2\omega_9^2v_1^2 + 64\omega_{13}^2\omega_9\omega_6v_1^2 - 43\omega_{13}\omega_9^3\omega_6^2v_1^2 + 43\omega_{13}^2\omega_9^2\omega_6^2v_1^2 + 44\omega_{13}c_s^2\omega_9^3\omega_6 + 8\omega_9^3\omega_6 + 16c_s^2\omega_9^3\omega_6^2$$

$$C_{30} = 6\omega_{13}^2c_s^4\omega_9^2\omega_6^2 + 48\omega_{13}\omega_9^3\omega_6^2v_1^4 + 12c_s^2\omega_9^3\omega_6^2v_1^2 - 5\omega_{13}^2c_s^2\omega_9^3\omega_6^2 - 4\omega_{13}^2\omega_9^3\omega_6^3v_1^2 - 12\omega_{13}c_s^2\omega_9^2\omega_6^2v_1^2 - 24\omega_{13}^2c_s^4\omega_9^3\omega_6 + 12\omega_{13}^2\omega_9^2\omega_6^2v_1^4 + 12\omega_9^3\omega_6^3v_1^4 + \omega_{13}^2c_s^4\omega_9^2\omega_6^3 - 36\omega_{13}\omega_9\omega_6^3v_1^4 + 162\omega_{13}^2c_s^2\omega_9^2\omega_6^2v_1^2 - 60\omega_{13}\omega_9^2\omega_6^3v_1^2 + 12\omega_{13}^2c_s^4\omega_6^3 + 24\omega_{13}\omega_9^3\omega_6v_1^2 + 12\omega_9^2\omega_6^3v_1^2 + 54\omega_{13}c_s^2\omega_9^2\omega_6^3v_1^2 + 18\omega_{13}^2\omega_9^3\omega_6^2v_1^2 - 12c_s^2\omega_9^3\omega_6^2v_1^2 - 12\omega_{13}c_s^2\omega_9^3\omega_6v_1^2 - 6\omega_{13}^2c_s^2\omega_9^2\omega_6^2 + 13\omega_{13}^2c_s^4\omega_9^3\omega_6^2 - 27\omega_{13}\omega_9^3\omega_6^3v_1^4 - \omega_{13}^2c_s^2\omega_9^2\omega_6^3 + 6\omega_{13}^2c_s^2\omega_9^3\omega_6 + 90\omega_{13}^2\omega_9\omega_6^3v_1^2 + 24\omega_{13}\omega_9^3\omega_6^2v_1^2 - 48\omega_{13}^2c_s^2\omega_9^3v_1^2 + 12\omega_{13}^2\omega_9^3\omega_6v_1^4 + 60\omega_{13}^2c_s^2\omega_9^2\omega_6^3v_1^2 + 19\omega_{13}^2\omega_9^3\omega_6^3v_1^4 - 72\omega_{13}^2\omega_6^3v_1^2 - \omega_{13}^2c_s^4\omega_9^3\omega_6^3 - 12\omega_9^3\omega_6^2v_1^4 + 102\omega_{13}^2c_s^2\omega_9^3\omega_6v_1^2 + 27\omega_{13}\omega_9^3\omega_6^2v_1^2 + 12\omega_{13}^2c_s^2\omega_9\omega_6^3 - 36\omega_{13}c_s^2\omega_9\omega_6^3v_1^2 + 18\omega_{13}c_s^2\omega_9^3\omega_6^2 - 12\omega_{13}^2c_s^2\omega_6^3 + 12\omega_{13}c_s^4\omega_9^2\omega_6^2 - 12\omega_9^2\omega_6^3v_1^4 + 252\omega_{13}^2c_s^2\omega_6^3v_1^2 - 18\omega_{13}^3\omega_9^2\omega_6^2v_1^4 - 81\omega_{13}^2c_s^2\omega_9^3\omega_6^2v_1^2 - 12\omega_{13}^2\omega_9^3\omega_6v_1^2 - 6\omega_{13}c_s^2\omega_9^3\omega_6^3 - 12c_s^2\omega_9^2\omega_6^3v_1^2 + 72\omega_{13}^2\omega_6^3v_1^4 + 12\omega_{13}^2c_s^2\omega_9\omega_6^2 + 30\omega_{13}c_s^2\omega_9^3\omega_6^2v_1^2 - 19\omega_{13}^2\omega_9^2\omega_6^3v_1^2 + 12\omega_9^3\omega_6^2v_1^2 - 90\omega_{13}^2\omega_9\omega_6^3v_1^4 - 306\omega_{13}^2c_s^2\omega_9\omega_6^3v_1^2 - 24\omega_{13}\omega_9^2\omega_6^2v_1^4 + 12\omega_{13}c_s^4\omega_9^3\omega_6 - 6\omega_{13}c_s^4\omega_9^2\omega_6^3 + 12\omega_{13}^2c_s^2\omega_9^3\omega_6^3v_1^2 - 12\omega_{13}^2c_s^4\omega_9\omega_6^3 - 48\omega_{13}^2c_s^2\omega_9^2\omega_6v_1^2 - 18\omega_{13}c_s^4\omega_9^3\omega_6^2 + 4\omega_{13}^2\omega_9^3\omega_6^3v_1^4 + 12\omega_{13}^2c_s^4\omega_9^3 - 12\omega_{13}c_s^2\omega_9^3\omega_6^2 - 48\omega_{13}\omega_9^3\omega_6^2v_1^2 - 108\omega_{13}^2c_s^2\omega_9\omega_6^2v_1^2 + 60\omega_{13}\omega_9^2\omega_6^3v_1^4 + 6\omega_{13}c_s^4\omega_9^3\omega_6^3 - 24\omega_{13}\omega_9^3\omega_6v_1^4 - 12\omega_{13}^2c_s^4\omega_9\omega_6^2 - 12\omega_{13}^2\omega_9^2\omega_6^2v_1^2 - 21\omega_{13}c_s^2\omega_9^3\omega_6^3v_1^2 - 12\omega_9^3\omega_6^3v_1^2 + 6\omega_{13}c_s^2\omega_9^2\omega_6^3 - 12\omega_{13}c_s^2\omega_9^3\omega_6 + 36\omega_{13}\omega_9\omega_6^3v_1^2$$

$$C_{31} = 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 - 3\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2v_1^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2v_1^2 + 3\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + 3\omega_{13}c_s^2\omega_8\omega_5^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2v_1^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - \omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6 - \omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - \omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2 - 9\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 + \omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + 6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6v_1^2 + \omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - \omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - \omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 + 3\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2v_1^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 + 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 3c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - \omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - \omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 3\omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2v_1^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2v_1^2 +$$

$$
\begin{aligned}
&3\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12}\omega_6^2v_1^2 + \omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + \omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2v_1^2 + \\
&\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - 3\omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 3\omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \\
&\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - 3c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - \omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2 + \\
&\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6 + \omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + \omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6^2 - \\
&2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - \omega_{13}^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + 6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2 + 6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6
\end{aligned}
$$

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\begin{aligned}
C_{32} = {}&6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 - \omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2 + \\
&\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2v_1^2 - 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2v_1^2 + \omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + \\
&\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + \omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \\
&3\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - 3\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6 - \omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2 + \\
&\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 3\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_6^2v_1^2 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2v_1^2 - \\
&6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 3\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6v_1^2 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6v_1^2 - \\
&\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 + \omega_{13}^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2c_s^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2c_s^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + \\
&2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2v_1^2 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 3\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 - \\
&3\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2v_1^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2v_1^2 + 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6v_1^2 - \\
&2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 + \omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \\
&3\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 - 3\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2v_1^2 - \omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6v_1^2 + \\
&\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 3\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - \omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 + \omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \\
&\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2 - 9\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2v_1^2 + \\
&3\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 + 6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - \omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6 + \\
&6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2v_1^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + \omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 + 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + \\
&c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - 3\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \\
&\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \\
&\omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + \omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_6^2 + 6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2v_1^2 + \\
&3\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2v_1^2 + \\
&\omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 + 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2v_1^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^3\omega_{12}\omega_6^2 - 3\omega_{13}^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + \\
&\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - \omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_6^2 + 6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6v_1^2 + \omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \\
&2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12}\omega_6^2v_1^2 + \omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + \omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2v_1^2 + \\
&3\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - \omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + \omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \\
&3\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - \omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2 + \\
&\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6 + 3\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + 3\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - \omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6^2 - \\
&6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - \omega_{13}^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6
\end{aligned}
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$$
\begin{aligned}
C_{33} = {}&-3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6v_1^2 - 2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 + 6\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + \\
&2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6 - \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6v_1^2 + \omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6 + \\
&2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + \\
&2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 11\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2v_1^2 - \\
&2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2v_1^2 - \\
&3\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_6^2 + \\
&8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - \\
&2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_6^2 - 2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6v_1^2 - \\
&2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 11\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6v_1^2 - \\
&2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2v_1^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + 2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \\
&4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2v_1^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2v_1^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - \\
&6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + 3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 9\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - \\
&13\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + \\
&2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6v_1^2 - \\
&6\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2v_1^2 + 2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 + \\
&2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_6^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_6^2v_1^2 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2 - 15\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - \\
&3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6v_1^2 - 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 5\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2v_1^2 - \\
&\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6 + 2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + \\
&4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + 2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^2 + \\
&2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2v_1^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6v_1^2 - 2\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + \\
&9\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 - 8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_9^3\omega_{12}^2\omega_6^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2v_1^2 + \\
&2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6v_1^2 - 2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + 2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - \\
&8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^2v_1^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^2v_1^2 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - \\
&2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2v_1^2 - 6\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6v_1^2 + 3\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 - \\
&2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6 - 3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \\
&2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_6^2v_1^2 - 9\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - \\
&2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2\omega_6^2v_1^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6v_1^2 + 2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 - \\
&4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6v_1^2 + 8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - \\
&2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + 5\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2 + \\
&4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + \\
&12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 15\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +
\end{aligned}
$$

$4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2v_1^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2$

$C_{34} = -2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2\omega_6^3 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3v_1^2 + 9\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 +$
$4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3v_1^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3v_1^2 - 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3 +$
$2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12}\omega_6^3 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 15\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 +$
$2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 - 2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3v_1^2 - 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_6^3 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2\omega_6^3v_1^2 -$
$4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^3 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3v_1^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 +$
$2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3 + 2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3v_1^2 - 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 +$
$2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3 - \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3 - 15\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3 -$
$2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^3 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 9\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^3v_1^2 -$
$8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3 - 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2\omega_6^3 +$
$2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3v_1^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3v_1^2 + 2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3v_1^2 +$
$2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 + 2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 -$
$2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - 3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3v_1^2 - 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_9^3\omega_{12}\omega_6^3 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3v_1^2 +$
$4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^3 - 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 13\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2v_1^2 -$
$4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3v_1^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3v_1^2 -$
$\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^3 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_6^3 -$
$2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_6^3v_1^2 - 8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 9\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3 + 2\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 +$
$\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3v_1^2 + 8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 -$
$2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3v_1^2 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3v_1^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - 2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 -$
$2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12}\omega_6^3v_1^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3v_1^2 -$
$4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 - 3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 -$
$4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^3 + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^3 + 5\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3 -$
$3\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3 + 3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3v_1^2 - 2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 +$
$2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^3 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3v_1^2 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 +$
$\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6v_1^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 -$
$\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3v_1^2 + 2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^3v_1^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3v_1^2 -$
$8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3v_1^2 - 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3v_1^2 -$
$2\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3+4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3+8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2-6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3+2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3v_1^2+$
$2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 -$
$11\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2v_1^2 + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^3 + 3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3 +$
$\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3v_1^2 + 2\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^3v_1^2 + 11\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 +$
$2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 3\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^3 +$
$4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^3v_1^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - 5\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3v_1^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3$

$C_{35} = \omega_8\omega_5\omega_6^2 - \omega_8^2\omega_5^2\omega_6^2 + \omega_8\omega_5^3 + 2\omega_8^2\omega_5^2\omega_6 - 2\omega_8^2\omega_6^2 - \omega_5^3\omega_6^2 + \omega_8\omega_5^3\omega_6^2 - \omega_8^2\omega_5\omega_6 + \omega_5^3\omega_6 + 3\omega_8^2\omega_5\omega_6^2 - 2\omega_8\omega_5^3\omega_6 + \omega_5^2\omega_6^2 - 2\omega_8\omega_5^2\omega_6^2 - \omega_8^2\omega_5^2$

$C_{36} = 4\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_{13}\omega_7\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 +$
$4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 + 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 +$
$4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12}^2\omega_6 - 2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 -$
$4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_6^2 + 4\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6 +$
$4\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_9^2\omega_{12}^2\omega_6 - 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6 +$
$2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6 -$
$4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 + 5\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 +$
$2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_6^2 + 2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 -$
$8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 4\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^2 -$
$4\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6 - 5\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 -$
$10\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6 + 4\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6$

$C_{37} = 2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + \omega_{17}\omega_5^2\omega_{15}^2\omega_6^2 + 2\omega_8\omega_5^3\omega_{15}^2\omega_6^2 - 2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 + \omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 3\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2 +$
$2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + \omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6^2 - \omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + \omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 2\omega_8\omega_5^3\omega_{15}^2\omega_6 - \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 -$
$4\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - \omega_{17}\omega_5^3\omega_{15}^2\omega_6^2 - 2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 + 2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + 5\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - \omega_8^2\omega_5^3\omega_{15}^2\omega_6^2 + \omega_8^2\omega_5^3\omega_{15}^2\omega_6 + \omega_{17}\omega_8\omega_5^3\omega_{15}^2 -$
$\omega_{17}\omega_8^2\omega_5^3\omega_6^2 - 4\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2 - 3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 + \omega_{17}\omega_5^3\omega_{15}^2\omega_6 - 2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 4\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 + 2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6$

$C_{38} = 12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2 + 24\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 + 12\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3v_1^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 +$
$12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2v_2^2 + 6\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3 - 12\omega_{13}\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 12\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_6^3v_1^2 +$
$12\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_6^3v_1^2 - 12\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 + 36\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2 -$
$12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2 + 24\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2 + 12\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_6^3 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6v_2^2 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2+12\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2+12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3-18\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3-$
$12\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 + 24\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2 - 12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}v_2^2 -$
$18\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2 - 24\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^3v_1^2 + 12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2 -$
$18\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 6\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3v_1^2 - 12\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_6^3 +$
$12\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2+12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6v_2^2-24\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2-12\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3-$

$12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3v_1^2 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2 - 36\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2 -$
$6\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 + 24\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3 - 48\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 +$
$12\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3v_1^2 + 24\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6v_1^2 + 12\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_6^3v_1^2 - 2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3v_2^2 + 6\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 -$
$6\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2 + 12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2 - 12\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2 + 12\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 -$
$12\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2 - 12\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 12\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 48\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 24\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 12\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2 -$
$12\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 + 18\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6v_2^2 - 12\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 +$
$6\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 24\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^3v_1^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3v_1^2 +$
$12\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_6^3 + 12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2 - 24\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2 +$
$12\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6 - 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3v_2^2 - \omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 -$
$12\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_6^3v_1^2 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2 - 24\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}\omega_6^3 +$
$12\omega_{13}\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 18\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_5^3\omega_{15}\omega_9\omega_6^3 +$
$12\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 + 24\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2 - 24\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_{15}\omega_9\omega_{12}\omega_6^3 - 6\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2v_2^2 +$
$30\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 + 12\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2 - 24\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^3v_1^2 -$
$12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_6^3v_1^2 + 12\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 + 12\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2 -$
$12\omega_{13}\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 6\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6 +$
$12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2 - 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2 + 10\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$36\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 12\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 - 12\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2 - 24\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6v_1^2$

$C_{39} = 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_6v_2^2\omega_{16} - 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} - 3\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 12\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 -$
$2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} + 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2 - 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 4\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 6\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} +$
$4\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} + 24\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} + 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 3\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16} -$
$6\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} + 2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} +$
$12\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 4\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} + 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16} + 6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_6\omega_{16} + 4\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} -$
$4\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6v_2^2 - 12\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} + 12\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 8\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} - 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16} +$
$12\omega_{10}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 9\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} +$
$2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_{16} + 2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2 + 9\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6v_2^2 - 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2\omega_6\omega_{16} +$
$4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_5\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2\omega_{16} + 12\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16} + 2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} -$
$2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} + 4\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 4\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} + 12\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_{15}^2\omega_6\omega_{16} -$
$4\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2v_2^2\omega_{16} - 12\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} - 12\omega_{10}^2\omega_7c_s^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 12\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 +$
$2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} + 4\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_{16} + 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16} + 4\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2\omega_6\omega_{16} +$
$12\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16} + 8\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6v_2^2\omega_{16} - 12\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_{16} + 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16} +$
$12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2 - 4\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 12\omega_{10}\omega_7c_s^2\omega_{17}\omega_5\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}v_2^2\omega_{16} -$
$4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2v_2^2\omega_{16} - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16} - 4\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} - 6\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} -$
$2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16} - 2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 12\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} - 6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} + 12\omega_{10}^2\omega_7c_s^2\omega_5^2\omega_{15}^2\omega_{16} -$
$3\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2 - 24\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} + 4\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} + 6\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 +$
$4\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 8\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16} - 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2 - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15}\omega_6v_2^2\omega_{16} -$
$12\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} - 4\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2 + 6\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} +$
$4\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2\omega_6v_2^2\omega_{16} + 6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16} + 12\omega_{10}^2\omega_7c_s^2\omega_5\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 +$
$12\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 6\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 4\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} + 6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6\omega_{16} + 8\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16} + 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}$

$C_{40} = -8c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2 + \omega_{17}\omega_8^2\omega_5^3\omega_6^2v_2^2 + 2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + \omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6^2v_2^2 - \omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2 + c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_6^2 + 2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 -$
$c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2v_2^2 + 4c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + \omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6v_2^2 + 4c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - \omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2 +$
$2\omega_8\omega_5^3\omega_{15}^2\omega_6^2 + 2c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 2c_s^2\omega_{17}\omega_5^3\omega_{15}^2\omega_6 + \omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 + \omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 13c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 2\omega_8\omega_5^3\omega_{15}^2\omega_6v_2^2 +$
$2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - \omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6^2 - 6c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - \omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 + 2\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_2^2 + 2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 - 2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 +$
$\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 2\omega_8\omega_5^3\omega_{15}^2\omega_6 - \omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_2^2 - 2c_s^2\omega_{17}\omega_5^3\omega_{15}^2\omega_6^2 - 2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - \omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2v_2^2 + \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 -$
$11c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 - 2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2 + c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6^2 - 2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2v_2^2 + 7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 4\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_2^2 +$
$2c_s^2\omega_8\omega_5^3\omega_{15}^2\omega_6 - c_s^2\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 - 2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + 6c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2 - \omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 -$
$7c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 + 2\omega_8\omega_5^2\omega_{15}^2\omega_6^2v_2^2 - 2\omega_{17}\omega_8^2\omega_5^2\omega_6^2v_2^2 - \omega_8^2\omega_5^3\omega_{15}^2\omega_6^2 + \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2 + \omega_8^2\omega_5^3\omega_{15}^2\omega_6 + \omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2v_2^2 - \omega_{17}\omega_8^2\omega_5^3\omega_6^2 -$
$2c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 + 5c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6^2 - 2\omega_8\omega_5^3\omega_{15}^2\omega_6^2v_2^2 - 2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - \omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6^2v_2^2 -$
$2c_s^2\omega_8\omega_5^3\omega_{15}^2\omega_6^2 + 2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6^2 + \omega_8^2\omega_5^3\omega_{15}^2\omega_6^2v_2^2 + \omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 - 5c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - \omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2 + 2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6$

$C_{41} = 6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_6v_2^2\omega_{16} - 12\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} - 3\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 -$
$6\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} + 6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2 - 4\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 4\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} +$
$12\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} + 8\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} + 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 3\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16} -$
$2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} + 6\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} +$
$4\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 12\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} + 6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16} + 2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_6\omega_{16} +$
$12\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} - 12\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6v_2^2 - 4\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 24\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} -$
$4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} + 4\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 +$
$2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} + 2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_{16} + 6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2 + 3\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 12\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6v_2^2 -$
$4\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_5\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2\omega_{16} + 4\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16} +$

$2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} - 6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 v_2^2\omega_{16} + 4\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 12\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2\omega_6 v_2^2\omega_{16} +$
$4\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8\omega_{15}^2\omega_6\omega_{16} - 12\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 v_2^2\omega_{16} - 4\omega_{10}^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 9\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 v_2^2\omega_{16} - 4\omega_{10}^2\omega_7 c_s^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} -$
$4\omega_{10}^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} + 4\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_{16} + 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16} +$
$4\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7 c_s^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16} + 8\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} - 12\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 v_2^2\omega_{16} - 4\omega_{10}\omega_7 c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_{16} +$
$12\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16} + 4\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 12\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 v_2^2 - 4\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 4\omega_{10}\omega_7 c_s^2\omega_{17}\omega_5\omega_{15}^2\omega_6\omega_{16} -$
$12\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} v_2^2\omega_{16} - 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 v_2^2\omega_{16} - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16} - 4\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} -$
$2\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 6\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6 v_2^2\omega_{16} - 2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 4\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} +$
$4\omega_{10}^2\omega_7 c_s^2\omega_5^2\omega_{15}^2\omega_{16} - 9\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 v_2^2 - 8\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} - 6\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 v_2^2\omega_{16} + 12\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 v_2^2\omega_{16} +$
$2\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 8\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 v_2^2\omega_{16} - 12\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 v_2^2 -$
$12\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15}\omega_6 v_2^2\omega_{16} - 4\omega_{10} c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 12\omega_{10}^2\omega_7\omega_5\omega_{15}^2\omega_6 v_2^2\omega_{16} - 4\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} + 12\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 v_2^2 +$
$2\omega_{10}^2\omega_7 c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 12\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2\omega_6 v_2^2\omega_{16} + 2\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16} + 4\omega_{10}^2\omega_7 c_s^2\omega_5\omega_{15}^2\omega_6\omega_{16} - 12\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2\omega_6 v_2^2\omega_{16} -$
$4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 4\omega_{10} c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{10}^2\omega_7 c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 12\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 v_2^2\omega_{16} +$
$2\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6\omega_{16} + 24\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16} + 12\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 v_2^2\omega_{16}$

$C_{42} = 12\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 v_2^2\omega_{16} + 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 12\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}^2\omega_6^2 v_2^2\omega_{16} + 6\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 +$
$30\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} - 24\omega_{10}^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2\omega_{16} - 6\omega_{10}^2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2\omega_{16} +$
$6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 v_2^2\omega_{16} + 12\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 v_2^2 - 24\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2\omega_{16} -$
$4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} + 12\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} - 6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} + 12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_5\omega_{15}^2\omega_6^2\omega_{16} - 6\omega_{10}^2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} -$
$12\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} + 6\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16} -$
$12\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 v_2^2\omega_{16} + 6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 v_2^2\omega_{16} - 6\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 v_2^2\omega_{16} + 3\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} +$
$6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 v_2^2\omega_{16} - 36\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_6^2\omega_{16} + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 v_2^2 + 54\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2\omega_{16} -$
$6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2 v_2^2\omega_{16} - 12\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2\omega_{16} + 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 v_2^2\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 v_2^2 +$
$12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2\omega_{16} + 42\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 6\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 v_2^2 + 6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} -$
$12\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} + 3\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 v_2^2\omega_{16} + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 12\omega_{10}^2\omega_7^2 c_s^2\omega_8^2\omega_5\omega_{15}^2\omega_6^2\omega_{16} -$
$6\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 54\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} - 12\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15}^2\omega_6^2 v_2^2\omega_{16} - 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 +$
$\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 v_2^2\omega_{16} - 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 18\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} + 12\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5\omega_{15}^2\omega_6^2\omega_{16} -$
$9\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 24\omega_{10}^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 18\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 v_2^2\omega_{16} -$
$12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} - \omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} - 54\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2\omega_{16} -$
$12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15}^2\omega_6^2\omega_{16} + 12\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} - 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 v_2^2 +$
$18\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2\omega_{16} + 24\omega_{10}^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} + 12\omega_{10}^2\omega_7^2 c_s^2\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} - 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} -$
$6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 v_2^2\omega_{16} - 24\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2\omega_{16} - 54\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2\omega_{16} - 36\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2\omega_{16} -$
$36\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} - 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_{16} + 9\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} -$
$12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6^2 v_2^2\omega_{16} - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} - 12\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2\omega_{16} - 12\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}^2\omega_6^2\omega_{16} + 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 +$
$12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 v_2^2\omega_{16} + 18\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 v_2^2\omega_{16} +$
$6\omega_{10}^2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} + 36\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2\omega_{16} - 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 24\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_{15}^2\omega_6^2\omega_{16} - 12\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} +$
$6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 v_2^2\omega_{16} - 6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16} - 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 12\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 v_2^2 - 6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2\omega_{16} +$
$6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 18\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 9\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 v_2^2 - 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16} -$
$42\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6^2\omega_{16} - 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2 v_2^2\omega_{16} + 6\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 +$
$12\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2 v_2^2\omega_{16} - 3\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16} - 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 v_2^2 + 12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} +$
$36\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2\omega_{16} + 18\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16} + 24\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} - 12\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6^2\omega_{16} +$
$6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 9\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6 v_2^2\omega_{16} - 6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 v_2^2\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15}\omega_6^2 v_2^2\omega_{16}$

$C_{43} = 18\omega_{13} c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} v_1^2 + 6\omega_{13} c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 12\omega_{13}^2 c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} v_1^2 + 12\omega_{13}^2 v_3^2\omega_9^3\omega_6^2 v_1^2 - 12\omega_{13}^2 c_s^2\omega_{18}\omega_9^3\omega_6^2 v_1^2 - 36\omega_{13}^2 c_s^4\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$12\omega_{13} v_3^2\omega_{18}\omega_9^3\omega_6^3 v_1^2 + 6\omega_{13}^2 v_3^2\omega_9^2\omega_6^3\omega_{22} v_1^2 - 2\omega_{13}^2 c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} v_1^2 + 24\omega_{13}^2 v_3^2\omega_{18}\omega_9^2\omega_6\omega_{22} v_1^2 - 72\omega_{13} v_3^2 c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 12\omega_{13}^2 c_s^2\omega_9^3\omega_6^2 -$
$12\omega_{13} v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} v_1^2 + 30\omega_{13} c_s^4\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 12\omega_{13}^2 c_s^2\omega_9^2\omega_6^2\omega_{22} - 54\omega_{13}^2 v_3^2 c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13} c_s^2\omega_{18}\omega_9^2\omega_6^3 + 72\omega_{13} v_3^2 c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} +$
$12\omega_{13}^2 c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 18\omega_{13}^2 v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 36 v_3^2 c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 6\omega_{13}^2 c_s^2\omega_{18}\omega_9^2\omega_6^3 - 88\omega_{13}^2 c_s^4\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 12 v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} v_1^2 +$
$6\omega_{13}^2 c_s^2\omega_9^2\omega_6^3\omega_{22} v_1^2 - 12\omega_{13}^2 v_3^2\omega_{18}\omega_9^3\omega_6^2 v_1^2 - 12\omega_{13} c_s^2\omega_{18}\omega_9^3\omega_6^3 v_1^2 - 12\omega_{13} v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} v_1^2 + 6\omega_{13}^2 c_s^2\omega_9^3\omega_6^3 + 12\omega_{13} v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} +$
$12 c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} v_1^2 + 12\omega_{13}^2 c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 12\omega_{13} c_s^2\omega_{18}\omega_9^3\omega_6^3 - 12\omega_{13} c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} v_1^2 + 36\omega_{13}^2 v_3^2 c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 6\omega_{13}^2 c_s^2\omega_9^2\omega_6^3\omega_{22} +$
$12\omega_{13}^2 v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22} v_1^2 - 36\omega_{13} v_3^2 c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12 v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} v_1^2 + 12\omega_{13} v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 42\omega_{13} c_s^4\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 12 v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} -$
$12 c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} v_1^2 + 12\omega_{13} v_3^2\omega_{18}\omega_9^3\omega_6^2 v_1^2 - 24\omega_{13}^2 v_3^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 36\omega_{13}^2 c_s^4\omega_9^3\omega_6^2 + 6\omega_{13}^2 c_s^2\omega_{18}\omega_9^3\omega_6^3 v_1^2 - 48\omega_{13}^2 c_s^4\omega_{18}\omega_9\omega_6^2\omega_{22} +$
$36\omega_{13}^2 v_3^2 c_s^2\omega_9^3\omega_6^2 - 12\omega_{13}^2 v_3^2\omega_9^3\omega_6^2 - 18\omega_{13} c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 6\omega_{13}^2 v_3^2\omega_9^3\omega_6^3 v_1^2 + 12\omega_{13}^2 c_s^2\omega_{18}\omega_9^3\omega_6^2 + 12\omega_{13}^2 v_3^2\omega_{18}\omega_6^3\omega_{22} v_1^2 + 36\omega_{13}^2 c_s^4\omega_{18}\omega_6^3\omega_{22} +$
$12\omega_{13}^2 c_s^2\omega_{18}\omega_6^3\omega_{22} v_1^2 + 12 c_s^4\omega_{18}\omega_9^2\omega_6^3\omega_{22} - \omega_{13}^2 c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 36\omega_{13} v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 72\omega_{13}^2 v_3^2 c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 36\omega_{13}^2 v_3^2 c_s^2\omega_{18}\omega_6^3\omega_{22} -$
$12\omega_{13}^2 c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} v_1^2 + 6\omega_{13}^2 v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} v_1^2 - 12\omega_{13} c_s^2\omega_{18}\omega_9^3\omega_6^2 + 12\omega_{13} c_s^4\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13} c_s^2\omega_{18}\omega_9^3\omega_6^2 v_1^2 + 6\omega_{13}^2 v_3^2\omega_{18}\omega_9^3\omega_6^3 v_1^2 +$
$12\omega_{13}^2 c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 12 c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 5\omega_{13}^2 c_s^4\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 6\omega_{13}^2 c_s^2\omega_{18}\omega_9^3\omega_6^3 + 6\omega_{13}^2 v_3^2\omega_9^3\omega_6^3 - 12\omega_{13}^2 v_3^2\omega_{18}\omega_6^3\omega_{22} - 36 v_3^2 c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} -$
$12\omega_{13}^2 v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 84\omega_{13}^2 c_s^4\omega_{18}\omega_9^2\omega_6\omega_{22} - 18\omega_{13}^2 v_3^2 c_s^2\omega_9^3\omega_6^3 + 12\omega_{13} c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 36\omega_{13} v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} v_1^2 + \omega_{13}^2 c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} v_1^2 -$
$18\omega_{13}^2 c_s^4\omega_9^3\omega_6^3 + 12\omega_{13} c_s^2\omega_{18}\omega_9^2\omega_6^3 v_1^2 + 24\omega_{13} v_3^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 12\omega_{13}^2 c_s^2\omega_9^2\omega_6^2\omega_{22} v_1^2 - 12\omega_{13} v_3^2\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2 v_3^2\omega_9^2\omega_6^2\omega_{22} -$
$18\omega_{13}^2 c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2 c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} v_1^2 + 12 c_s^4\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 24\omega_{13} v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12 c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} v_1^2 - 72\omega_{13}^2 v_3^2 c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} +$
$36\omega_{13} c_s^4\omega_{18}\omega_9^2\omega_6^3 - 36\omega_{13}^2 c_s^4\omega_9^2\omega_6^2\omega_{22} - 36\omega_{13} v_3^2 c_s^2\omega_{18}\omega_9^3\omega_6^3 - 36 v_3^2 c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2 c_s^2\omega_9^3\omega_6^2 v_1^2 - 96\omega_{13}^2 c_s^4\omega_{18}\omega_9^3\omega_{22} - 36\omega_{13}^2 v_3^2 c_s^2\omega_9^2\omega_6^2\omega_{22} +$
$150\omega_{13}^2 c_s^4\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12 c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 24\omega_{13} v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} v_1^2 - 42\omega_{13} c_s^4\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12 v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 18\omega_{13}^2 c_s^4\omega_{18}\omega_9^2\omega_6^3 +$
$18\omega_{13}^2 c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} v_1^2 - 36\omega_{13} v_3^2 c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 12\omega_{13} c_s^4\omega_{18}\omega_9^3\omega_6\omega_{22} - 18\omega_{13}^2 v_3^2 c_s^2\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}^2 v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 6\omega_{13} c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} v_1^2 +$
$6\omega_{13}^2 v_3^2\omega_{18}\omega_9^2\omega_6^3 - 24\omega_{13} v_3^2\omega_{18}\omega_9^3\omega_6\omega_{22} v_1^2 - 18\omega_{13} c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 36\omega_{13} v_3^2 c_s^2\omega_{18}\omega_9^3\omega_6^2 - 12\omega_{13}^2 v_3^2\omega_9^2\omega_6^2\omega_{22} v_1^2 + 12\omega_{13} c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} +$
$12\omega_{13} v_3^2\omega_{18}\omega_9^2\omega_6^3 v_1^2 + 18\omega_{13}^2 v_3^2 c_s^2\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2 v_3^2\omega_{18}\omega_9^3\omega_6^2 - 6\omega_{13}^2 c_s^2\omega_9^3\omega_6^3 v_1^2 - 6\omega_{13}^2 c_s^4\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12 c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 18\omega_{13}^2 c_s^4\omega_9^2\omega_6^3\omega_{22} -$
$36\omega_{13} c_s^4\omega_{18}\omega_9^3\omega_6^3 - 12\omega_{13}^2 c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} v_1^2 - 12\omega_{13} c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} v_1^2 - 12\omega_{13} v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} v_1^2 + 36\omega_{13} v_3^2 c_s^2\omega_{18}\omega_9^2\omega_6^3 + 180\omega_{13}^2 c_s^4\omega_{18}\omega_9^3\omega_6\omega_{22} +$
$12\omega_{13} v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 2\omega_{13}^2 c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12 c_s^4\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 36\omega_{13} v_3^2 c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 36\omega_{13}^2 c_s^4\omega_{18}\omega_9^3\omega_6^2 + 18\omega_{13}^2 v_3^2 c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} -$

$6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3v_1^2 - 12\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} + 18\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 - 36\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2 - 24\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}^2v_3^2\omega_9^2\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^3 - 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3v_1^2 + 36\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^2 - 12\omega_{13}^2c_s^2\omega_{18}\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2\omega_{18}\omega_9^3\omega_6^3 - 6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3 -$
$12v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22}v_1^2 - 18\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^2 + 108\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 18\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^3 - 12v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}$

$C_{44} = -132\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 84\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22}v_1^2 + 36\omega_{13}^2v_3^2\omega_9^3\omega_6^2v_1^2 - 36\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^2v_1^2 +$
$6\omega_{13}^2c_s^4\omega_{18}\omega_9\omega_6^3\omega_{22} - 36\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^3v_1^2 + 18\omega_{13}^2v_3^2\omega_9^2\omega_6^3\omega_{22}v_1^2 - 18\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 + 72\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6\omega_{22}v_1^2 -$
$24\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 12\omega_{13}^2c_s^2\omega_9^3\omega_6^2 - 36\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_9^2\omega_6^2\omega_{22} - 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$12\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 6\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 18\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3 -$
$4\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 36v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 + 18\omega_{13}^2c_s^2\omega_9^2\omega_6^3\omega_{22}v_1^2 - 36\omega_{13}^2v_3^2\omega_{18}\omega_9^3\omega_6^2v_1^2 - 36\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^3v_1^2 - 36\omega_{13}v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 +$
$6\omega_{13}^2c_s^2\omega_9^3\omega_6^3 + 12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 24c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}v_1^2 - 108\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^3 + 72\omega_{13}c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 +$
$12\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 6\omega_{13}^2c_s^2\omega_9^2\omega_6^3\omega_{22} + 36\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 36v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}v_1^2 +$
$12\omega_{13}v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 24\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 12v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 24c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 + 36\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^2v_1^2 - 24\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6\omega_{22} +$
$12\omega_{13}^2c_s^4\omega_9^3\omega_6^2 + 18\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^3v_1^2 - 12\omega_{13}^2c_s^4\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2c_s^2\omega_9^3\omega_6^2 - 12\omega_{13}^2v_3^2\omega_9^3\omega_6^2 + 24\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 18\omega_{13}^2v_3^2\omega_9^3\omega_6^3v_1^2 +$
$12\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^2 + 36\omega_{13}^2v_3^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 36\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 24\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 12\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_6^3\omega_{22} - 84\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22}v_1^2 +$
$18\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^2 + 60\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 + 36\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^2v_1^2 + 18\omega_{13}^2v_3^2\omega_{18}\omega_9^3\omega_6^3v_1^2 + 12\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} -$
$\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 6\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^3 + 6\omega_{13}^2v_3^2\omega_9^3\omega_6^3 - 12\omega_{13}^2v_3^2\omega_{18}\omega_6^3\omega_{22} - 12v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 12\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6\omega_{22} -$
$6\omega_{13}^2v_3^2c_s^2\omega_9^3\omega_6^3 + 108\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}^2c_s^4\omega_9^3\omega_6^3 + 36\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^2v_1^2 + 24\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 36\omega_{13}^2c_s^2\omega_9^2\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3 +$
$12\omega_{13}^2v_3^2\omega_9^2\omega_6^2\omega_{22} - 24\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 18\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 24c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22}v_1^2 - 24\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} +$
$12\omega_{13}c_s^4\omega_{18}\omega_9^2\omega_6^3 - 12\omega_{13}^2c_s^4\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3 - 12v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 48\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_{22}v_1^2 + 36\omega_{13}^2c_s^2\omega_9^3\omega_6^2v_1^2 -$
$12\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_{22} - 12\omega_{13}^2v_3^2c_s^2\omega_9^2\omega_6^2\omega_{22} + 24\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 72\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}c_s^4\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} -$
$6\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^3 + 180\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 12\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6\omega_{22} - 6\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} +$
$78\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}^2v_3^2\omega_{18}\omega_6^3\omega_6^3 - 72\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2 - 36\omega_{13}^2v_3^2\omega_9^2\omega_6^2\omega_{22}v_1^2 -$
$12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} + 36\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3v_1^2 + 6\omega_{13}^2v_3^2c_s^2\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2\omega_{18}\omega_9^3\omega_6^2 - 18\omega_{13}^2c_s^2\omega_9^3\omega_6^3v_1^2 - 6\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 6\omega_{13}^2c_s^4\omega_9^2\omega_6^3\omega_{22} -$
$12\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^3 - 42\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22}v_1^2 + 60\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22}v_1^2 - 36\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 18\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6\omega_{22} +$
$12\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^2 + 6\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 18\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3v_1^2 -$
$144\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2 - 72\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}^2v_3^2\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^3 - 18\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3v_1^2 +$
$12\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^2 - 12\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 6\omega_{13}^2v_3^2\omega_{18}\omega_9^3\omega_6^3 - 6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 6\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3 - 36v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22}v_1^2 -$
$54\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^2 + 36\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 6\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^3 - 12v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 12\omega_{13}c_s^4\omega_{18}\omega_9^2\omega_6^2\omega_{22}$

$C_{45} = 5\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 4\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} - 2\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3 -$
$4\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 - 4\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2v_1^2 + 3\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} - 8c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3\omega_6\omega_{22} + 4\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2 +$
$\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} + 2\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 2\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 - 4\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3v_1^2 +$
$\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22}v_1^2 + 9\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22}v_1^2 + 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22}v_1^2 + 4\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 4\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} + 8c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} -$
$9\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} + 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3v_1^2 + 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 + 4\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2 + 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22}v_1^2 - 2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}v_1^2 -$
$2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 8\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} - 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2 - 2\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$
$4\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22}v_1^2 + 4\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} + 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2v_1^2 + 8\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} - 6\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22} +$
$\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3\omega_{22}v_1^2 + 13\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 - 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 + 4\omega_{13}^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 -$
$15\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 4\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} - 2\omega_{13}^2c_s^2\omega_{11}\omega_9^3\omega_6^3\omega_{22} + 4\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2 + 4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2v_1^2 - 3\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22}v_1^2 +$
$3\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 11\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} - 2\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3 - 4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2 + 8\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3\omega_{22} -$
$3\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}v_1^2 + 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3v_1^2 - 16\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_{22} + 6\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22} + 2\omega_{13}^2c_s^2\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} - 4\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 -$
$7\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} - 4\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22}v_1^2 + 2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3 - 5\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 3\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 8\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} +$
$26\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22} + 2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2\omega_{22}v_1^2 + 2\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 - 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22} -$
$24\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 5\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} - \omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 4\omega_{13}^2c_s^2\omega_{11}\omega_9^3\omega_6^2\omega_{22} - 2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3v_1^2 - 4\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} -$
$\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 7\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}v_1^2 - 4\omega_{13}^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - \omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 4\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2 - \omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22}v_1^2 +$
$2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 8c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} - 6\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22}v_1^2 - 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3v_1^2 + 4\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3$

$C_{46} = 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 - 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_1 +$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2^2v_1 +$
$2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2v_2v_1^2 - 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 - 2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3v_2^2v_1 -$
$2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + \omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 + 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 -$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3v_2v_1^2 + 2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2^2v_1 +$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3v_2^2v_1 + 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 - 2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3v_1 -$
$\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2 + 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 +$
$\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + \omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2 +$
$2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 - 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 +$
$2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 - \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 +$
$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1 + 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2v_1 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$
$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2v_2 + 2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 -$
$2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3v_2v_1^2 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 -$
$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2v_1 + 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3v_2v_1^2 + 4\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3v_2^2v_1 +$
$2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2v_2v_1^2 - 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2 - 2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 +$
$4\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2 - \omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2v_2^2v_1 +$
$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 + 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 -$
$2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2v_1 -$

$$2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2v_2v_1^2 - \omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 -$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 - 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 + \omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_1 -$$
$$\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3v_2 + 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 -$$
$$\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1^2 - 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 +$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2 - \omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 -$$
$$\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - \omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 +$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2 + 2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 +$$
$$\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 -$$
$$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2v_2v_1^2 - \omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + \omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 +$$
$$2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1 + 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 -$$
$$2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1^2 + \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 -$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + \omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 +$$
$$\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1^2 -$$
$$2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1^2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 - 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 -$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2 - 2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 +$$
$$\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 -$$
$$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2v_2v_1^2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + \omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 +$$
$$\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 -$$
$$2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1^2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 - 2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 -$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2 - 2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 +$$
$$\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 - 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 -$$
$$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2v_2^2v_1 - 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1^2 +$$
$$4\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 -$$
$$2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2v_1 -$$
$$8\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3v_2v_1^2 + \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1^2 -$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 +$$
$$2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3v_2v_1^2 + 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 +$$
$$\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2 + 2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 - 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 +$$
$$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2v_2^2v_1 - 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2^2v_1 + 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 -$$
$$2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 +$$
$$2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3v_2v_1^2 - 2\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 + 2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 +$$
$$8\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 -$$
$$2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 -$$
$$\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_1 + 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 + \omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 -$$
$$2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 - 2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1 + \omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1^2 +$$
$$2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - \omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 -$$
$$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 - 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1^2 - 2\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 +$$
$$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2v_2^2v_1 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1^2 -$$
$$\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 - 2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + 2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1^2 - 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 -$$
$$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + \omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 - 2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + 2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 -$$
$$2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + \omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 +$$
$$\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_1 + 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 +$$
$$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1 -$$
$$2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 - 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 +$$

$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2 - 2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1^2 - 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 -$
$2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - 2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2 - 8\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 +$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 - \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 +$
$2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 +$
$2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 + 2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1^2 +$
$2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - 4\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - 4\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 +$
$2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + 2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 -$
$2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2v_1 + 2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 +$
$2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 - 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 -$
$2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 - \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1^2 +$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - \omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 + \omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2$

$C_{47} = \omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2 - 8\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_{22}v_2v_1 - 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + \omega_{13}^2\omega_7v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 - 2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}v_2^2 -$
$\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2 - 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 14\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_2v_1 + 4\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1 +$
$2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2^2 + \omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + \omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 +$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2v_1 + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 - \omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^3\omega_{22} +$
$2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 - \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2^2 - 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1 +$
$\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 - 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6\omega_{22}v_2v_1 +$
$2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2^2 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$
$2\omega_{13}^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 + \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 +$
$2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6\omega_{22}v_2v_1 - \omega_{13}^2\omega_7v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}v_2^2 +$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 - 2\omega_{13}^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 -$
$4\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2v_1 + 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_2v_1 - 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2v_2v_1 -$
$2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 - 4\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 +$
$8\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2^2 +$
$\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 4\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$
$4\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2v_1 -$
$2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2v_2v_1 + \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2^2 +$
$\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2v_1 -$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3v_2v_1 + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2^2 + 9\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 - 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} -$
$2\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 +$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2v_2v_1 +$
$4\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1 + 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$
$\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2^2 + 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 2\omega_{13}^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2 + 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3v_2v_1 + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2^2 + 9\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 - 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} -$
$2\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 +$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2v_1 - 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 - 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 -$
$2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2v_1 +$
$4\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2v_2v_1 + 2\omega_{13}^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$
$\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 + 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2v_2^2 + 6\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 +$
$2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2v_1 + 4\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2^2 - 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} - \omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2^2 -$
$2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3 + 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 +$
$\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$

$4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 - 12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 2\omega_{13}^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{22}v_2^2 -$
$2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2v_1 + \omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 - 12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2 + 8\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$
$2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2^2 + \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2 +$
$2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2v_1 +$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 12\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6\omega_{22}v_2v_1 + 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2^2 - 4\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$
$8\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 -$
$4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} -$
$\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_2v_1 + 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1 - 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 + \omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 -$
$4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 + 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 +$
$4\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 - \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2^2 +$
$4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2v_2v_1 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 - 8\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2v_1 - 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2v_1 - \omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 +$
$\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3v_2v_1 + \omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 -$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2^2 - 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 -$
$\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$2\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2 - 2\omega_{13}^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} -$
$4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2v_2^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 - \omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 - 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 -$
$4\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 - 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$
$2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2v_1 + \omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2^2 +$
$2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2 - 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2 +$
$2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3v_2v_1 - 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2v_2^2 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2v_2v_1 -$
$2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2^2 + \omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_2^2 - 4\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$
$2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2$

$C_{48} = -18\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1 -$
$12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 -$
$12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 + 18\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 18\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$12\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^3\omega_{22}v_2v_1 +$
$24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 6\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22}v_1^2 -$
$60\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} +$
$6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 - 24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 12\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3v_1^2 -$
$12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$
$24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 12\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3v_2v_1 + 24\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3v_1^2 +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22} + 36\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 +$
$12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 6\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 -$
$24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 + 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1^2 +$
$12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} - 24\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2v_2v_1 - 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 24\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1 + 12\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2v_1^2 +$
$12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3v_1^2 - 6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 24\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 24\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2v_2v_1 - 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 -$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3v_1^2 - 24\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2v_2v_1 -$
$12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 48\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 -$
$12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 + 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$
$12\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 + 12\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 +$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2v_1^2 +$
$12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 12\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3 -$
$12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 12\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1^2 -$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1^2 - 24\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 24\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_{22} +$
$24\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} - 6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 24\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$

$12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 6\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 +$
$10\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 6\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 -$
$12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 42\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 -$
$24\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3v_2v_1 - 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 +$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1 - 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 6\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 +$
$12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2v_1^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3v_1^2 + 6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1 -$
$24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 12\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 + 12\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 +$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 -$
$12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$12\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 24\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$6\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 + 12\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2v_2v_1 -$
$12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$12\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1 + 24\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1 +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3v_2v_1 + 12\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2v_1^2 +$
$12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 18\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 + 24\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1 -$
$6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 + 24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$
$12\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{8}\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 -$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 - 24\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 24\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$
$6\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2v_2v_1 +$
$12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 -$
$24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 -$
$24\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 12\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 - 12\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 +$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2v_2v_1 - 12\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$24\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1 - 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 +$
$6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 + 6\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 +$
$24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 60\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_8^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 - 12\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3v_1^2 -$
$6\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 +$
$12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 24\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3v_2v_1 -$
$12\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 + 24\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 24\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 -$
$24\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} + 24\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} +$
$6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 24\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 + 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1^2 +$
$24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_{12}\omega_6^2\omega_{22}v_1^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} +$
$12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22}v_2v_1 - \omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 24\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_1^2 - 6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3v_1^2 -$
$18\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 -$
$24\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2v_1^2 + 12\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2 + 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1 - 6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3v_2v_1 +$
$12\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1 - 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 36\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2$

$C_{49} = 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + 2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + \omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 +$
$2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22}v_1 -$

$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_2 + 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 -$
$6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 - 2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2 +$
$2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 + 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 + 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3v_1 +$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2v_2v_1^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3v_2^2v_1 - 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3v_2 + \omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + 2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_1 +$
$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 - 2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$
$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2 - 2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 -$
$2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1 -$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22}v_2 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 - 2\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 +$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2^2v_1 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 +$
$2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3v_2^2v_1 + 2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 -$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 - 2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22}v_1 -$
$2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2v_1 - 2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 5\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6\omega_{22}v_2 +$
$2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22}v_2v_1^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 +$
$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 - 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2v_2^2v_1 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1 -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 - 4\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_{22}v_2 + 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 +$
$\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + \omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 - \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22}v_2v_1^2 -$
$2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 +$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_2^2v_1 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 - 2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1^2 -$
$2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 - 4\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 -$
$2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3v_2v_1^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_2v_1^2 -$
$2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 + 2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_2^2v_1 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2 + 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2v_2 - 2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_2 - \omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$
$2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_1 - 2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 -$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3v_2 -$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3v_1 + 3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2v_1^2 - 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1 + 2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 -$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3v_2 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 +$
$2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_1 - \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 +$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 +$
$2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 - 2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1^2 + 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 + \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 -$
$\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2v_2 + 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2v_2v_1^2 -$
$2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 - \omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2v_1 -$
$\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3v_2v_1^2 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1 +$
$2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3v_2 + 2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2 +$
$2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 + 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3v_2v_1^2 - 2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 - 2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 -$
$2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22}v_2^2v_1 + 3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6\omega_{22}v_2 - 6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 +$
$2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3v_2^2v_1 + 2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_2^2v_1 -$
$\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 - 2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 - 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3v_1 + 2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2^2v_1 -$
$2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_1 - 2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_2v_1^2 +$
$2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 + 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 -$
$2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22}v_2^2v_1 +$
$\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_1 -$
$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3v_1 + 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2v_2^2v_1 -$
$2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1 + 2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 -$
$2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_2 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2v_2 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2 + \omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22}v_2^2v_1 +$
$2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2v_1 + \omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2 + 2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2v_1^2 +$
$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2v_1 + 2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}v_2v_1^2 - 2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22}v_2$

$C_{50} = 6\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1^2 + 12\omega_7^2v_3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2v_1^2 + 6\omega_7^2v_3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_2^2 - 6\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2v_1 +$
$12\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_2^2v_1 - 3\omega_7^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1 + 6\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2v_1 - 3\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_2^2v_1^2 -$
$12\omega_7^2v_3c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_1^2 - 6\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1^2 + 24\omega_7^2c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6v_1 + 3\omega_7^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2v_1 +$
$3\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2v_2^2v_1 + 12\omega_7^2v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2v_1 - 12\omega_7^2v_3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_1^2 + 3\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2 -$
$12\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2v_1 + 6\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1 + 12\omega_7^2v_3c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2 - 6\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2v_1 -$
$6\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2v_1 + 12\omega_7^2v_3^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2v_1 + 12\omega_7^2v_3c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1^2 + 12\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_2^2v_1^2 -$
$12\omega_7^2v_3^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1 - 12\omega_7^2v_3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2 - 6\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2v_1 + 12\omega_7^2v_3\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2v_1^2 +$
$3\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1^2 - 6\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2 - 12\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1 -$
$12\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2v_1 - 12\omega_7^2v_3c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2 - 24\omega_7c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}v_1 + 24\omega_7^2c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}v_1 +$
$6\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_2^2v_1^2 + 12\omega_7^2v_3\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2v_1^2 + 12\omega_7^2v_3^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1 + 6\omega_7^2v_3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_1^2 -$
$6\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_2^2v_1 - 3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2v_1 - 12\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2v_1 + 6\omega_7^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1 +$

$6\omega_7^2 v_3 c_s^2 \omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 v_2^2 - 12\omega_7^2 v_3\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1^2 + 12\omega_7^2 v_3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 - 12\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1^2 -$
$6\omega_7^2 v_3 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1^2 + 12\omega_7^2 v_3^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1 + 12\omega_7^2 v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 - 3\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 v_2^2 v_1^2 -$
$3\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 v_1^2 + 12\omega_7^2 v_3 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 12\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1 + 3\omega_7^2 v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2 v_1 +$
$12\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 6\omega_7^2 v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1 - 6\omega_7^2 v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 v_2^2 v_1 - 6\omega_7^2 v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1^2 -$
$12\omega_7^2 v_3\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1^2 - 48\omega_7^2 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1 - 12\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1 - 12\omega_7^2 v_3 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_2^2 -$
$6\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 v_2^2 v_1 - 6\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 v_1 + 6\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 - 12\omega_7^2 v_3 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_1^2 +$
$12\omega_7^2 v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_2^2 v_1 - 12\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1^2 - 6\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1^2 - 12\omega_7^2 v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 +$
$12\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1 + 48\omega_7 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1 + 12\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1 + 24\omega_7^2 c_s^4\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6^2 v_1 +$
$6\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 - 24 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1 + 12\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1^2 - 24\omega_7 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_{15}\omega_6^2 v_1 -$
$3\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 v_2^2 + 12\omega_7^2 v_3 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1^2 - 6\omega_7^2 v_3 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 6\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_2^2 v_1^2 -$
$12\omega_7^2 v_3^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 + 12\omega_7^2 v_3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1^2 - 12\omega_7^2 v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1 - 12\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1 +$
$12\omega_7^2 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 - 12\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 - 6\omega_7^2 v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 v_2^2 v_1 - 3\omega_7^2 v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 -$
$48\omega_7^2 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1 + 12\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_1 - 12\omega_7^2 v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1 - 12\omega_7^2 v_3\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_2^2 v_1^2 +$
$6\omega_7^2 v_3\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1^2 + 12\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_2^2 v_1 - 28\omega_7 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1 - 6\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_1 -$
$12\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1 + 3\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2 v_1 + 12\omega_7^2 v_3^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1 - 12\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 +$
$6\omega_7^2 v_3 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 24 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1 + 12\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1 + 12\omega_7^2 v_3\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1^2 +$
$12\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 - 6\omega_7^2 v_3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1^2 + 6\omega_7^2 v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1^2 + 6\omega_7^2 v_3 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 -$
$12\omega_7^2 v_3^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1 - 12\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1 + 6\omega_7^2 v_3 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1^2 + 12\omega_7^2 v_3^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 +$
$12\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1^2 - 24 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1 - 12\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 - 6\omega_7^2 v_3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 +$
$6\omega_7^2 v_3 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1^2 + 3\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1^2 + 12\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1^2 + 24\omega_7^2 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1 +$
$6\omega_7^2 v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 - 12\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 + 6\omega_7^2 v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 v_2^2 v_1^2 + 12\omega_7^2 v_3^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1 +$
$3\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_1 + 48\omega_7 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1 - 6\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 v_2^2 v_1 + 24\omega_7^2 c_s^4\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1 -$
$6\omega_7^2 v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1 - 6\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1^2 + 12\omega_7^2 v_3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 12\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 +$
$6\omega_7^2 v_3^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1 + 6\omega_7^2 v_3 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 v_2^2 - 12\omega_7^2 v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 - 12\omega_7^2 v_3 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1^2 +$
$3\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 v_2^2 v_1 - 6\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1^2 - 12\omega_7^2 v_3 c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1^2 + 6\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_1^2 +$
$6\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 - 6\omega_7^2 v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2 v_1 - 6\omega_7^2 v_3^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 + 2\omega_7^2 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1 +$
$12\omega_7^2 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1 - 3\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2 - 12\omega_7^2 v_3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 v_1^2 + 6\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 v_2^2 v_1^2 -$
$6\omega_7^2 v_3^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_1 - 12\omega_7^2 v_3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 v_2^2 - 3\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_1^2 + 6\omega_7^2 v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 -$
$12\omega_7^2 v_3\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1^2 + 6\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1 + 6\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_2^2 - 6\omega_7^2 v_3\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1^2 -$
$12\omega_7^2 v_3 c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 12\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 - 24\omega_7^2 c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1 + 6\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 v_1 +$
$12\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 v_2^2 v_1 - 6\omega_7^2 v_3^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_1 + 6\omega_7^2 v_3 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 v_1^2 - 6\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 v_2^2 v_1 -$
$12\omega_7^2 v_3 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 - 6\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 - 12\omega_7^2 v_3\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1^2 - 12\omega_7^2 v_3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 v_2^2 v_1^2 -$
$6\omega_7^2 v_3^2 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_1 + 12\omega_7^2 v_3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_1^2$

$C_{51} = -12c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 + v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 - 2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 v_2^2 + 4c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 +$
$4v_3\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 v_2^2 v_1 - 4v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_1 + 8v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6 - 4c_s^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 + c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 v_2^2 -$
$2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 v_2^2 v_1 - 8v_3 c_s^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_1 + 4c_s^4\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 8v_3\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 v_1 + 4v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$
$4c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^3 + 4v_3 c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 v_1 - 8v_3\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 v_1 - 8v_3\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 -$
$2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 - 4v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 + 8v_3\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 + 4v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 v_1 +$
$8v_3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 v_1 + 4v_3^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 + 4c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 2v_3^2 c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 + 4c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 v_2^2 +$
$8v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 2c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 2v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 4v_3 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_1 + 8v_3 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_1 -$
$4c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 - 4c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 4c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 4c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} v_2^2 - 8v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_1 +$
$4v_3^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 v_2^2 - 12v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^2 - 8v_3\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 v_2^2 v_1 - 4c_s^4\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 +$
$2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 - c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 - 2v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 + 2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 - 2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 +$
$4c_s^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 2c_s^4\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^2 v_2^2 + 2v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 8v_3 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_1 +$
$8v_3 c_s^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_1 - 2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 v_2^2 v_1 - 2v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 v_1 + 2v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_1 +$
$v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 v_2^2 - 8v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 8v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 4c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 4c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$8c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 - 4c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 v_2^2 - 4v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 + 2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 v_1 -$
$4v_3\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 v_1 - 2v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 8v_3\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 +$
$4v_3\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 v_1 + 8v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_1 - 2v_3^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 v_2^2 + 8v_3 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_1 - 8v_3 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 v_1 -$
$4c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 - 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^3 + 4c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 - 4v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_{15}\omega_6^3 -$
$16v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 4c_s^4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 4c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 - 2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 v_2^2 +$
$6c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6 v_2^2 - 16c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 + 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 8v_3 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 v_1 +$
$4v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 - 4c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 4v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_1 + 4v_3\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 v_2^2 v_1 + 4c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 -$
$8c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 2v_3^2 c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4v_3^2 c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 8v_3 c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_1 + 4v_3^2 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 -$
$2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 v_2^2 + 6v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^3 - 8v_3\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 v_1 - 8v_3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_1 -$
$2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 v_2^2 + 2v_3^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 + 4v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 4v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 + 4v_3^2 c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^3 +$
$4v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^3 - 8v_3\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 v_1 - 2v_3^2 c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 8v_3\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 + 2c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 +$
$4v_3^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 - 12c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 8v_3\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 v_2^2 v_1 - 2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 v_2^2 + 4v_3 c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_1 -$
$2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 + 8c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^3 v_2^2 - 2v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^3 - 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6 + 4c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 +$
$4v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 v_1 + 2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 8c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 v_2^2 + c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 v_2^2 -$
$4v_3^2 c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 4v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 4v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 v_2^2 - 4v_3^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 + 4c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 v_2^2 +$
$2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 + 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 4c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 v_2^2 - 8v_3 c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_1 - 4v_3^2 c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15}\omega_6^3 +$
$4v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 v_2^2 v_1 + 4v_3^2 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 8v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 v_2^2 v_1 + v_3^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 + 4v_3\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 v_2^2 v_1 +$

$8v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3v_2^2v_1 + 4c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2 - 4c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 -$
$4v_3\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3v_2^2v_1 - 4v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2v_2^2 + 4v_3c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3v_1 - v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3v_2^2 +$
$4v_3^2c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 4v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3v_1 + 4c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6v_2^2 +$
$2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3v_2^2 - 2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2 - 4v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3v_2^2v_1 - 4v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2v_2^2v_1 +$
$8v_3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3v_1 + 4v_3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3v_1 + 4c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^3v_2^2 - 4v_3c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3v_1 +$
$4c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 4v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2v_1 + 4v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3v_2^2 - 4v_3^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3v_2^2 + v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^3v_2^2$

$C_{52} = 4\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2v_1\omega_{16} + 4\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1 + 2\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} +$
$4\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_1^2\omega_{16} - \omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} - 4\omega_{10}\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}v_1\omega_{16} + \omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} - 8\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} -$
$2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16} - 2\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{16} +$
$2\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1^2\omega_{16} - 4\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{16} - 2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{16} + \omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_1\omega_{16} -$
$4\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{16} - 4\omega_{10}\omega_7^2v_3^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} -$
$2\omega_{10}\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} - 4\omega_{10}\omega_7^2v_3\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_1^2\omega_{16} - 4\omega_{10}\omega_7^2v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} -$
$2\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2v_1\omega_{16} - 4\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1 +$
$4\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} - 4\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} - 4\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2v_1^2\omega_{16} + 4\omega_{10}\omega_7^2v_3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{16} + \omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} + 4\omega_{10}\omega_7^2v_3^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} -$
$4\omega_{10}\omega_7^2v_3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16} - \omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 4\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_1\omega_{16} - 2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} - 4\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2v_1 +$
$4\omega_{10}\omega_7^2v_3\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} - 4\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} -$
$2\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{16} +$
$3\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1 + 2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} - 2\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} -$
$4\omega_{10}\omega_7^2v_3c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{16} - 4\omega_{10}\omega_7^2v_3\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{16} +$
$4\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2v_1\omega_{16} + 4\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} +$
$4\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{16} + 4\omega_{10}\omega_7^2v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16} - 4\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} + 4\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1 - 2\omega_{10}\omega_7^2v_3^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} -$
$4\omega_{10}\omega_7^2v_3\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} - 2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1 - 4\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} -$
$4\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} - 2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} - \omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2v_1^2\omega_{16} +$
$4\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} - 4\omega_{10}\omega_7^2v_3\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_1^2\omega_{16} - 2\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} -$
$4\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} + 4\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} + \omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2v_1\omega_{16} -$
$4\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{16} + 4\omega_{10}\omega_7^2v_3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{16} - 2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2v_1\omega_{16} +$
$10\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} - 4\omega_{10}\omega_7^2v_3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{16} - 2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2v_1\omega_{16} +$
$4\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{16} - 4\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{16} - 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1 -$
$\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} - 4\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} + 4\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 2\omega_{10}\omega_7^2v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_1\omega_{16} - 3\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} +$
$2\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16} +$
$4\omega_{10}\omega_7^2v_3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{16} - 2\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} +$
$6\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} + \omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_1\omega_{16} - 4\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_1^2\omega_{16} + 4\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{16} -$
$2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{16} + 4\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{16} + 4\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} + 4\omega_{10}\omega_7^2v_3\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1^2\omega_{16} + 4\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} -$
$4\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1\omega_{16} + 4\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2v_1\omega_{16} - 4\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1\omega_{16} -$
$\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{16} - 2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{16} + \omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{16}$

$C_{53} = -2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 - 16\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 - 8\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_{19}v_1 +$
$8\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_{19}v_1 - 4\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_2^2v_1 - 4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1 -$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 + 6\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1 - 4\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2v_1^2 +$
$8\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 - 4\omega_7^2v_3\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 + 4\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2 +$
$4\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 + 8\omega_7^2v_3\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 -$
$\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2 + 2\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2 +$
$4\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 - 4\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_2^2v_1^2 + 4\omega_7^2v_3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 -$
$8\omega_7^2v_3\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2v_1 + 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2 + 2\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_1^2 -$
$\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 + 8\omega_7^2v_3c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1 - 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 +$
$4\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 + 2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - \omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1^2 -$
$8\omega_7^2v_3\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 - 4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 + 4\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1^2 -$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 + 8\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 + 4\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2v_1 -$
$4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1 + 4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 + \omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 +$
$8\omega_7^2v_3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2v_1 - 8\omega_7^2v_3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 + 4\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1^2 +$
$4\omega_7^2v_3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 + 2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 - \omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2 -$

$4\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - 4\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 + \omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 +$
$4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1 + 4\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2v_1^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 -$
$4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1^2 - 4\omega_7^2v_3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1 +$
$8\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2v_1 - 4\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 + 4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1 +$
$8\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1 + 8\omega_7^2v_3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1 + 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 +$
$12\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 - 6\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 + 2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2v_1^2 -$
$8\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_1 + 4\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2 +$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 + 4\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1 + \omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 -$
$4\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 + 4\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 - \omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_1^2 -$
$4\omega_7^2v_3\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 - 8v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1 + 4\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2 -$
$8\omega_7^2v_3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 + 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_2^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1^2 -$
$4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 + 2\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 - 4\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 +$
$2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 + 8\omega_7^2v_3\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_2^2v_1 - 2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 +$
$8\omega_7^2v_3c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 + 8\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1 + 2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1 -$
$\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 + 4\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 +$
$4\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2v_1^2 + 2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1^2 -$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2 - 2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 - 4\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 -$
$4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1 + 12\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 -$
$4\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_1 - 20\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1 - 2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 -$
$4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 - 8\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2v_1 + 8\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1 +$
$8\omega_7^2v_3\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2v_1 + 4\omega_7^2v_3\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 + 8\omega_7^2v_3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 -$
$4\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 - 4\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 + 2\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 +$
$8v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 - 8\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1 - 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2 +$
$4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 + 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2 + 2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_2^2v_1^2 +$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1^2 - 4\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6\omega_{19}v_1 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 +$
$4\omega_7v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 + 2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 + 4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 +$
$2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2 - 6\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 - 4\omega_7^2v_3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 -$
$8\omega_7^2v_3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 - 4\omega_7^2v_3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 -$
$4\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2 - 2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 - 4\omega_7^2v_3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 -$
$8\omega_7^2v_3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 - 8v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 +$
$4\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 - 2\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2 -$
$4\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1^2 + 8\omega_7^2v_3\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 + 4\omega_7^2v_3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 -$
$4\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2 - 8\omega_7^2v_3c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1 - 4\omega_7^2v_3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_1 -$
$8\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6v_1 - 2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1^2 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2 +$
$2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 - 8\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2 -$
$4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}v_2^2v_1^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19}v_1^2$

$C_{54} = 12v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 24\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22}v_1^2 + 24\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 +$
$24\omega_{13}\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2v_1^2 + 12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 6\omega_{13}v_3^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 +$
$36c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 156\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 +$
$12\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}c_s^4\omega_{11}^2\omega_9\omega_6^3\omega_{22} + 12v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 + 6\omega_{13}\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 12v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} -$
$36\omega_{13}c_s^2\omega_{11}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 3\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 36\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} + 18\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3v_1^2 +$
$9\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 15\omega_{13}\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 15\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 -$
$12v_3^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 36c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 144\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 + 12v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 -$
$6\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 12v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 + 12\omega_{13}c_s^4\omega_{11}^2\omega_9\omega_6^2\omega_{22} - 36c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} +$
$12\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 12c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 36c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 6\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 3\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 +$
$24\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22}v_1^2 - 36c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 6\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3v_1^2 + 12\omega_{13}c_s^2\omega_{11}^2\omega_9\omega_6^2\omega_{22} + 24\omega_{13}\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 +$
$36c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 36\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} + 36c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 +$
$36\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 12c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2 - 12\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 +$
$12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} - 42\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 12v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 12c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 108\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 -$
$18\omega_{13}c_s^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 36\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2v_1^2 + 36\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^2 - 6\omega_{13}\omega_{11}^2\omega_9\omega_6^3\omega_{22}v_1^2 - 9\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 +$
$36c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 - 36c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 36c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 15\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 72\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 -$
$\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 45\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 12v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 12v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} +$
$12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} - 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2v_1^2 - 12\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 + 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 6\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} -$
$48\omega_{13}\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 - 15\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 - 12\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 36\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 -$
$12v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 12\omega_{13}\omega_{11}^2\omega_{18}\omega_9\omega_6^2v_1^2 + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} + 6\omega_{13}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 12\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 + 6\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} +$
$72\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22}v_1^2 + 3\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 18\omega_{13}c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22}v_1^2 - 12v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 24\omega_{13}\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 -$
$6\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 12\omega_{13}\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 +$
$18\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3v_1^2 - 6\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 5\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 36\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} +$
$12\omega_{13}v_3^2\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 54\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 36\omega_{13}c_s^2\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 18\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 +$
$36c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 + 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 48\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}\omega_{11}^2\omega_9\omega_6^2\omega_{22}v_1^2 +$
$36\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 6\omega_{13}v_3^2\omega_{11}^2\omega_9\omega_6^3\omega_{22}v_1^2 + \omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 72\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} +$
$27\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 12\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 5\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 36\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 -$
$36c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 18\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 18\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 12v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 72\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 -$

$$12c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} - 60\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 12\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 - 96\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_{22} +$$
$$6\omega_{13}\omega_{11}^2\omega_{18}\omega_9\omega_6^3v_1^2 + 12c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 + 12\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_9\omega_6^2\omega_{22}$$

$$C_{55} = 12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 24c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 12\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} +$$
$$36\omega_{13}^2c_s^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 24\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 - 132\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 84\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_9^2\omega_6^3\omega_{22} -$$
$$24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 + 12\omega_{13}^2v_3^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} +$$
$$66\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 156\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9^3 - 66\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} +$$
$$24\omega_{13}^2\omega_{11}^2\omega_9^2\omega_6^2\omega_{22} + 90\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22} + 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 + 60\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^3\omega_{22} -$$
$$18\omega_{13}^2c_s^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 6\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 -$$
$$24\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2 - 96\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_{22} - 18\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 18\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 -$$
$$12\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} -$$
$$12\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} + 12\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 + 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} - 6\omega_{13}^2v_3^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} +$$
$$3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 84\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} +$$
$$24\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 - 18\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 18\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} +$$
$$24c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}^2\omega_9^2\omega_6^3\omega_{22} - 24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 - 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 36\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} +$$
$$12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 24\omega_{13}^2c_s^2\omega_{11}^2\omega_9^2\omega_6^3\omega_{22} + 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} +$$
$$12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^3 - 24\omega_{13}^2v_3^2\omega_{11}^2\omega_9^2\omega_6^2\omega_{22} -$$
$$24c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 4\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3 - 4\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} +$$
$$12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 36\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6\omega_{22} - 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 66\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 48\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} +$$
$$24\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2 - 36\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2 - 12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 42\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} -$$
$$72\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} - 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 24\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} +$$
$$72\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + \omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 48\omega_{13}^2c_s^2\omega_{11}^2\omega_9^2\omega_6^2\omega_{22} - \omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}$$

$$C_{56} = 36v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 24\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22}v_1^2 + 72\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 36\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 72\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 +$$
$$24\omega_{13}\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 + 36\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2v_1^2 + 12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 18\omega_{13}v_3^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 +$$
$$12c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 - 102\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 18\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 +$$
$$36\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 + 36v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 + 6\omega_{13}\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 36v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^2\omega_9\omega_6^2\omega_{22}v_1^2 -$$
$$6\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} + 6\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3v_1^2 + 27\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 +$$
$$18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 15\omega_{13}\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 - 36v_3^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 -$$
$$12c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 + 48\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 + 36v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$$
$$36v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 - 12c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 12c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 12c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$$
$$48\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_{22} - 6\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 30\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 72\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22}v_1^2 -$$
$$12c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 18\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3v_1^2 + 24\omega_{13}\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 + 12c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^3 -$$
$$12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 - 36\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} + 12c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 -$$
$$12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 12c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 36\omega_{13}v_3^2\omega_{11}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 60\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} - 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} +$$
$$36v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 12c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 36\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}c_s^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2v_1^2 + 12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^2 -$$
$$6\omega_{13}\omega_{11}^2\omega_9\omega_6^3\omega_{22}v_1^2 - 9\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 + 12c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 - 12c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 12c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 -$$
$$45\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 24\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 15\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 36v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 +$$
$$36v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 15\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} - 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 36\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 +$$
$$6\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 48\omega_{13}\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 - 5\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 - 12\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 -$$
$$108\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 - 36v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 12\omega_{13}\omega_{11}^2\omega_{18}\omega_9\omega_6^2v_1^2 - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} + 6\omega_{13}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 +$$
$$12\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} + 24\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22}v_1^2 - \omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 6\omega_{13}c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22}v_1^2 -$$
$$36v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 24\omega_{13}\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 18\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 72\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 - 36\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 +$$
$$12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 12\omega_{13}\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 - 18\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 5\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$$
$$12\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 54\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 36\omega_{13}v_3^2\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 18\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 -$$
$$18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 6\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 12c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 18\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3v_1^2 + 36\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 +$$
$$144\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}\omega_{11}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 36\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}v_1^2 + 18\omega_{13}v_3^2\omega_{11}^2\omega_9\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 +$$
$$\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 9\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 + 12\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3 - 15\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$$
$$12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2v_1^2 - 12c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 6\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 18\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 36v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$$
$$24\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 - 12c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 60\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} - 5\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 12\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 -$$
$$12\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_{22} + 6\omega_{13}\omega_{11}^2\omega_{18}\omega_9\omega_6^3v_1^2 + 12c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2v_1^2 + 12\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 + 24\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_9\omega_6^2\omega_{22}$$

$$C_{57} = -4\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 + 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 12c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 + 4\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 +$$
$$12\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} +$$
$$4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} - 24\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} +$$
$$3\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 4\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} +$$
$$4\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} + 8\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} + 4\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 +$$
$$2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} - 6\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} - 6\omega_7c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 +$$
$$2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} - 6\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} - 3\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 - 2\omega_7v_3^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$$
$$4\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} - 4\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 - 2\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 8\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} -$$
$$6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 12\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} +$$
$$12c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 + 4\omega_7v_3^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 4v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} +$$
$$4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} + 6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 12c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 - 8\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} -$$
$$4\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 4v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 4\omega_7v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} - 4v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} -$$

$$4\omega_7 v_3^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 + 12c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$$
$$3\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 4\omega_7 v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} - 12\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} +$$
$$12\omega_7 c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 2\omega_7\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 9\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 - 6\omega_7 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$$
$$24\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 2\omega_7 v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 6\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} - 4\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 -$$
$$4\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} - 3\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} - 4\omega_7 v_3^2\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} -$$
$$4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 12\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} - 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 -$$
$$4\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} + 12\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} - 4v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$$
$$4\omega_7 v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 - 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 12\omega_7 c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7 c_s^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$$
$$9\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 -$$
$$8\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7 v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} + 6\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 12c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}$$

$$C_{58} = -2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6 - 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2 + \omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 4v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + v_3^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3 - 11c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^2 - \omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^3 +$$
$$\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_6^3 - 2c_s^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 5c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^3 - 2v_3^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 + v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2 -$$
$$v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^3 - 6c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6 + c_s^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3 + \omega_8^2\omega_5\omega_{18}^2\omega_6^3 - 2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2 - 2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 2\omega_8\omega_5^2\omega_{18}^2\omega_6^2 -$$
$$2c_s^2\omega_{20}\omega_5^2\omega_{18}^2\omega_6^3 + 7c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 2v_3^2\omega_8\omega_5\omega_{18}^2\omega_6^3 + v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^3 - c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 2c_s^2\omega_8\omega_5\omega_{18}^2\omega_6^3 + 2\omega_8\omega_5^2\omega_{18}^2\omega_6^3 +$$
$$2c_s^2\omega_{20}\omega_5^2\omega_{18}^2\omega_6^2 + 2c_s^2\omega_{20}\omega_8\omega_{18}^2\omega_6^3 + \omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^3 + 4c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^2 - 2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6 - \omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 +$$
$$6c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6 + 2c_s^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2 + 2c_s^2\omega_{20}\omega_5\omega_{18}^2\omega_6^3 - 2c_s^2\omega_{20}\omega_8^2\omega_{18}^2\omega_6^2 + \omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^2 + c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^3 - 2v_3^2\omega_8\omega_5^2\omega_{18}^2\omega_6^3 -$$
$$5c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 - v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^3 + v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 + 2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6 - 2c_s^2\omega_8\omega_5^2\omega_{18}^2\omega_6^3 - 2\omega_8\omega_5\omega_{18}^2\omega_6^3 - 8c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$$
$$2v_3^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2 - \omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^3 - 2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 + 4c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2 - v_3^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3 + \omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - \omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2 -$$
$$2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 + 2v_3^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 2\omega_{20}\omega_8^2\omega_5^2\omega_6^2 + 2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 - c_s^2\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 13c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 + v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^3 -$$
$$\omega_{20}\omega_8^2\omega_5^2\omega_6^3 - v_3^2\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^3 - 4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 2c_s^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - c_s^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3 - \omega_8^2\omega_5^2\omega_{18}^2\omega_6^3$$

$$C_{59} = -12\omega_7^2 v_3^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - 6\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 +$$
$$18\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 6\omega_7^2 c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 18\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} +$$
$$12\omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 3\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 24\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} -$$
$$12\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19} + 12\omega_7^2 v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} + 6\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7^2 c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 30\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} -$$
$$12\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 6\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 24c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 +$$
$$12\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6\omega_7^2 v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 -$$
$$12\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 12\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$$
$$6\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 12\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 24c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} -$$
$$6\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7 c_s^2\omega_{20}\omega_{11}\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 3\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$$
$$6\omega_7^2 c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 36\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 12\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 + 12\omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$$
$$36\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_{19} + 12\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - 9\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 12\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7^2 v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} -$$
$$18\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 18\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 9\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 12\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_{19} -$$
$$6\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - 12\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - 54\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 12\omega_7^2 v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} -$$
$$\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} +$$
$$12\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7^2 v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} -$$
$$36\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_{19} + 42\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7^2 v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} + 12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19} +$$
$$6\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 24c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 42\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$$
$$18\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} + 6\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 24\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 6\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} -$$
$$12\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 + 6\omega_7^2 c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 54\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 6\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} -$$
$$6\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 24\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_{19} - 12\omega_7^2 v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} +$$
$$18\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} - 12\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 54\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 24\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_{19} -$$
$$9\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 12\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 12\omega_7^2 v_3^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} +$$
$$12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_{19} + 12\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 12\omega_7^2 c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 36\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19} +$$
$$12\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - 12\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} -$$
$$6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 6\omega_7^2 v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 6\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}$$

$$C_{60} = -12\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 + 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 6\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 4c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 + 4\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 +$$
$$4\omega_7 c_s^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 6\omega_7 v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 12v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7 c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} +$$
$$4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} - 8\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 12\omega_7 v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} +$$
$$9\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 12\omega_7 v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} +$$
$$12\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} + 8\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} + 12\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 +$$
$$6\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} - 2\omega_7 c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 +$$
$$6\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} - 2\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} - 9\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 - 6\omega_7 v_3^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$$
$$12\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} - 4\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 - 6\omega_7 v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 24\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} -$$
$$2\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 4\omega_7 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} - 4\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} +$$
$$4c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 6\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 + 12\omega_7 v_3^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 12v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} +$$
$$4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} + 2\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 4c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 - 8\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} -$$
$$4\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 12v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 12\omega_7 v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} - 12v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} -$$
$$12\omega_7 v_3^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 + 12\omega_7 v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 + 4c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$$
$$3\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 12\omega_7 v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} - 4\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} +$$

$$4\omega_7 c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 2\omega_7\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 3\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 - 2\omega_7 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$$
$$8\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 6\omega_7 v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 2\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} - 4\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 -$$
$$4\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} - 3\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} - 12\omega_7 v_3^2\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} -$$
$$4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 12\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} - 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 -$$
$$12\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} + 4\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} - 12 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$$
$$12\omega_7 v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 - 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7 c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7 c_s^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$$
$$3\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 -$$
$$24\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 12\omega_7 v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}$$

$$C_{61} = 72 v_3^2 c_s^2\omega_{11}\omega_{18}\omega_6^2 + 36 v_3^4\omega_{11}\omega_{18}^2\omega_6^2 + 24 v_3^2\omega_{11}^2\omega_6 - 14 c_s^2\omega_{11}\omega_{18}^2\omega_6^2 + 216 v_3^2 c_s^2\omega_{11}\omega_{18}^2 + 12 c_s^2\omega_{18}^2\omega_6^2 + 48 v_3^2\omega_{11}\omega_{18}\omega_6 - 24 c_s^4\omega_{11}^2\omega_6 -$$
$$36 v_3^4\omega_{18}^2\omega_6^2 + 288 v_3^2 c_s^2\omega_{18}^2\omega_6 + 24 c_s^4\omega_{18}^2\omega_6 - 48 v_3^2\omega_{11}\omega_{18}^2 + 12 v_3^4\omega_{11}^2\omega_6^2 - 144 v_3^2 c_s^2\omega_{11}^2\omega_6 + 24 c_s^4\omega_{11}\omega_{18}^2 - 72 v_3^2\omega_{18}^2\omega_6 - 12 c_s^2\omega_{11}^2\omega_6^2 - 30 v_3^4\omega_{11}^2\omega_{18}\omega_6^2 -$$
$$12 v_3^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 + 12 c_s^2\omega_{11}^2\omega_{18}\omega_6^2 + 3 v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2 - 48 c_s^2\omega_{11}^2\omega_{18}\omega_6 - 12 c_s^4\omega_{18}^2\omega_6^2 + 72 v_3^2 c_s^2\omega_{11}^2\omega_6^2 - 24 v_3^4\omega_{11}^2\omega_6 - c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2 + 36 v_3^2\omega_{18}^2\omega_6^2 +$$
$$96 v_3^4\omega_{11}^2\omega_{18}\omega_6 + 24 c_s^2\omega_{11}^2\omega_6 + 48 c_s^2\omega_{11}\omega_{18}^2\omega_6 - 12 v_3^2\omega_{11}^2\omega_6^2 + 48 v_3^4\omega_{11}\omega_{18}^2 - 24 c_s^2\omega_{18}^2\omega_6 - 24 v_3^2\omega_{11}\omega_{18}\omega_6^2 + 12 c_s^4\omega_{11}^2\omega_6^2 - 144 v_3^2 c_s^2\omega_{18}^2\omega_6^2 +$$
$$72 v_3^4\omega_{18}^2\omega_6 - 24 c_s^2\omega_{11}\omega_{18}^2 - 144 v_3^2 c_s^2\omega_{11}\omega_{18}\omega_6 - 96 v_3^4\omega_{11}\omega_{18}^2\omega_6 - 216 v_3^2 c_s^2\omega_{11}^2\omega_{18} - 36 v_3^2\omega_{11}\omega_{18}^2\omega_6^2 - 48 v_3^4\omega_{11}\omega_{18}\omega_6 - 432 v_3^2 c_s^2\omega_{11}\omega_{18}^2\omega_6 +$$
$$14 c_s^4\omega_{11}\omega_{18}^2\omega_6^2 + 30 v_3^2\omega_{11}^2\omega_{18}\omega_6^2 - 12 c_s^4\omega_{11}^2\omega_{18}\omega_6^2 + 48 v_3^2\omega_{11}^2\omega_{18} + 432 v_3^2 c_s^2\omega_{11}^2\omega_{18}\omega_6 - 24 c_s^4\omega_{11}^2\omega_{18} + 48 c_s^4\omega_{11}^2\omega_{18}\omega_6 - 126 v_3^2 c_s^2\omega_{11}^2\omega_{18}\omega_6^2 -$$
$$3 v_3^4\omega_{11}^2\omega_{18}^2\omega_6^2 - 96 v_3^2\omega_{11}^2\omega_{18}\omega_6 + c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 + 24 v_3^4\omega_{11}\omega_{18}\omega_6^2 + 150 v_3^2 c_s^2\omega_{11}\omega_{18}^2\omega_6^2 - 48 c_s^4\omega_{11}\omega_{18}^2\omega_6 - 48 v_3^4\omega_{11}^2\omega_{18} + 24 c_s^2\omega_{11}^2\omega_{18} + 96 v_3^2\omega_{11}\omega_{18}^2\omega_6$$

$$C_{62} = -8 c_s^2\omega_{18}^2\omega_6^2 - 24 v_3^4\omega_{18}^2\omega_6^2 + 156 v_3^2 c_s^2\omega_{18}^2\omega_6 - 48 c_s^4\omega_{18}^2\omega_6 - 24 v_3^2\omega_{18}^2\omega_6 + 3 v_3^4\omega_{18}^2\omega_6^3 + c_s^2\omega_{18}^2\omega_6^3 - 12 v_3^2\omega_6^3 + 6 v_3^2 c_s^2\omega_{18}^2\omega_6^3 - 96 v_3^2 c_s^2\omega_{18}^2 +$$
$$24 c_s^4\omega_{18}^2\omega_6^2 + 24 v_3^2\omega_{18}^2\omega_6^2 + 12 c_s^2\omega_{18}^2\omega_6 + 24 v_3^2\omega_6^2 - 72 v_3^2 c_s^2\omega_{18}^2\omega_6^2 + 24 v_3^4\omega_{18}^2\omega_6 - 3 v_3^2\omega_{18}^2\omega_6^3 - 3 c_s^4\omega_{18}^2\omega_6^3 - 24 c_s^2\omega_{18}\omega_6 + 48 v_3^2 c_s^2\omega_{18}\omega_6^2 -$$
$$48 v_3^4\omega_{18}\omega_6 + 18 v_3^2\omega_{18}\omega_6^3 + 6 c_s^4\omega_{18}\omega_6^3 - 12 v_3^2 c_s^2\omega_{18}\omega_6^3 - 24 c_s^4\omega_{18}\omega_6^2 - 72 v_3^2\omega_{18}\omega_6^2 + 24 c_s^4\omega_{18}\omega_6 - 24 v_3^4\omega_6^2 + 48 v_3^2\omega_{18}\omega_6 + 24 c_s^2\omega_{18}^2 -$$
$$18 v_3^4\omega_{18}\omega_6^3 + 12 v_3^2 c_s^2\omega_6^3 - 6 c_s^2\omega_{18}\omega_6^3 + 12 v_3^4\omega_6^3 + 24 c_s^2\omega_{18}\omega_6^2 - 24 v_3^2 c_s^2\omega_6^2 + 72 v_3^4\omega_{18}\omega_6^2 - 24 v_3^2 c_s^2\omega_{18}\omega_6$$

$$C_{63} = -48 v_3^2\omega_{11}^2\omega_6 - 12\omega_{11}\omega_{18}\omega_6^2 + 39 c_s^2\omega_{11}\omega_{18}^2\omega_6^2 - 48\omega_{18}^2\omega_6 - 36 c_s^2\omega_{18}^2\omega_6^2 - 72 v_3^2\omega_{11}\omega_{18}\omega_6 - 36\omega_{11}\omega_{18}^2 + 84 v_3^2\omega_{11}\omega_{18}^2 + 120 v_3^2\omega_{18}^2\omega_6 + 24\omega_{11}^2\omega_6 +$$
$$24 c_s^2\omega_{11}^2\omega_6^2 + 2\omega_{11}^2\omega_{18}^2\omega_6^2 - 33 c_s^2\omega_{11}^2\omega_{18}\omega_6^2 - 5 v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2 + 120 c_s^2\omega_{11}^2\omega_{18}\omega_6 - 60 v_3^2\omega_{18}^2\omega_6^2 - 12\omega_{11}^2\omega_6^2 - 48 c_s^2\omega_{11}^2\omega_6 - 120 c_s^2\omega_{11}\omega_{18}^2\omega_6 + 24 v_3^2\omega_{11}^2\omega_6^2 +$$
$$24\omega_{11}\omega_{18}\omega_6 + 24\omega_{18}^2\omega_6^2 + 72 c_s^2\omega_{18}^2\omega_6 + 36 v_3^2\omega_{11}\omega_{18}\omega_6^2 + 60 c_s^2\omega_{11}\omega_{18}^2 - 24 c_s^2\omega_{11}\omega_{18}\omega_6 + 72\omega_{11}\omega_{18}^2\omega_6 + 36\omega_{11}^2\omega_{18} + 61 v_3^2\omega_{11}\omega_{18}^2\omega_6^2 - 51 v_3^2\omega_{11}^2\omega_{18}\omega_6^2 -$$
$$72\omega_{11}^2\omega_{18}\omega_6 - 84 v_3^2\omega_{11}^2\omega_{18} + 168 v_3^2\omega_{11}^2\omega_{18}\omega_6 + 21\omega_{11}^2\omega_{18}\omega_6^2 - 3 c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 - 25\omega_{11}\omega_{18}^2\omega_6^2 + 12 c_s^2\omega_{11}\omega_{18}\omega_6^2 - 60 c_s^2\omega_{11}^2\omega_{18} - 168 v_3^2\omega_{11}\omega_{18}^2\omega_6$$

2.2.4 Conservation of momentum: ρv_2

$$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{\delta_l v_2 v_1}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\delta_l\rho v_2}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l\rho v_1}{\delta_t}\frac{\partial v_2}{\partial x_1} + (c_s^2 + v_2^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2\delta_l\rho v_2}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3\delta_l v_2}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_3} +$$
$$\frac{\delta_l\rho v_2}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_5)\frac{c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} +$$
$$(-2 - 2\omega_{10}c_s^2 + \omega_{10} + 4c_s^2 + 6v_2^2 - 3\omega_{10}v_2^2)\frac{\delta_l^2}{\omega_{10}\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + (2-\omega_{10})\frac{3\delta_l^2\rho v_2}{\omega_{10}\delta_t}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} +$$
$$(-2+\omega_7)\frac{c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_5)\frac{c_s^2\delta_l^2\rho}{2\omega_5\delta_t}\frac{\partial^2 v_2}{\partial x_1^2} + (-2+\omega_5)\frac{c_s^2\delta_l^2\rho}{2\omega_5\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_2} +$$
$$(-2 - 3\omega_{10}c_s^2 + \omega_{10} + 6c_s^2 + 2v_2^2 - \omega_{10}v_2^2)\frac{\delta_l^2 v_2}{2\omega_{10}\delta_t}\frac{\partial^2\rho}{\partial x_2^2} + (-2 - \omega_{10}c_s^2 + \omega_{10} + 2c_s^2 + 6v_2^2 - 3\omega_{10}v_2^2)\frac{\delta_l^2\rho}{2\omega_{10}\delta_t}\frac{\partial^2 v_2}{\partial x_2^2} +$$
$$(-2+\omega_7)\frac{c_s^2\delta_l^2\rho}{2\omega_7\delta_t}\frac{\partial^2 v_3}{\partial x_2\partial x_3} + (-2+\omega_7)\frac{c_s^2\delta_l^2\rho}{2\omega_7\delta_t}\frac{\partial^2 v_2}{\partial x_3^2} + C_1\frac{\delta_l^3 v_2 v_1}{12\omega_5\omega_9\omega_{12}\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + C_2\frac{\delta_l^3\rho v_2}{12\omega_5\omega_9\omega_{12}\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_3\frac{\delta_l^3\rho v_1}{6\omega_5^2\omega_{12}\delta_t}\frac{\partial^3 v_2}{\partial x_1^3} +$$
$$(-12 + 12\omega_5 - \omega_5^2)\frac{c_s^4\delta_l^3}{6\omega_5^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + (\omega_5\omega_{12} + 2\omega_5 - \omega_5^2 - 2\omega_{12})\frac{c_s^2\delta_l^3\rho v_1}{\omega_5^2\omega_{12}\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} +$$
$$(-12\omega_{10}\omega_{15} - \omega_{10}\omega_5^2\omega_{15} - 12\omega_{10}\omega_5^2 + 12\omega_5^2 + 12\omega_{10}\omega_5\omega_{15} - 12\omega_5\omega_{15} + 12\omega_{10}\omega_5)\frac{c_s^2\delta_l^3\rho v_2}{6\omega_{10}\omega_5^2\omega_{15}\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$C_4\frac{\delta_l^3 v_2 v_1}{\omega_{10}^2\omega_5\omega_{15}\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} + C_5\frac{\delta_l^3\rho v_2}{12\omega_{10}^2\omega_5^2\omega_{15}\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_6\frac{\delta_l^3\rho v_1}{\omega_{10}^2\omega_5\omega_{15}\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + C_7\frac{\delta_l^3}{12\omega_{10}^2\delta_t}\frac{\partial^3\rho}{\partial x_2^3} +$$
$$(-24 - 36\omega_{10}c_s^2 + 24\omega_{10} + 36c_s^2 - 4\omega_{10}^2 + 11\omega_{10}^2 v_2^2 + 60 v_2^2 - 60\omega_{10}v_2^2 + 5\omega_{10}^2 c_s^2)\frac{\delta_l^3\rho v_2}{6\omega_{10}^2\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} +$$
$$(-\omega_8\omega_5 + \omega_7\omega_8\omega_5 + \omega_7\omega_5 - \omega_7\omega_8 + \omega_5^2 - \omega_7\omega_5^2)\frac{v_3 c_s^2\delta_l^3\rho}{\omega_7\omega_8\omega_5^2\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_3} +$$
$$(-6\omega_8\omega_5 + 6\omega_5\omega_6 - 6\omega_7\omega_5\omega_6 - \omega_7\omega_8\omega_5\omega_6 + 6\omega_7\omega_8\omega_5 - 6\omega_7\omega_8 + 6\omega_7\omega_6)\frac{c_s^2\delta_l^3\rho v_2}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} +$$
$$(-\omega_8\omega_5 + \omega_7\omega_8\omega_5 + \omega_7\omega_5 - \omega_7\omega_8 + \omega_5^2 - \omega_7\omega_5^2)\frac{v_3 c_s^2\delta_l^3\rho}{\omega_7\omega_8\omega_5^2\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} +$$
$$(-\omega_8\omega_5 + \omega_7^2 - \omega_7^2\omega_5 + \omega_7\omega_8\omega_5 + \omega_7\omega_5 - \omega_7\omega_8)\frac{c_s^2\delta_l^3\rho v_1}{\omega_7^2\omega_8\omega_5\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + C_8\frac{v_3\delta_l^3 v_2}{\omega_{10}^2\omega_7\delta_t\omega_{16}}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + C_9\frac{v_3\delta_l^3\rho}{\omega_{10}^2\omega_7\delta_t\omega_{16}}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3}$$
$$+ C_{10}\frac{\delta_l^3\rho v_2}{12\omega_{10}^2\omega_7^2\delta_t\omega_{16}}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} +$$
$$(-6\omega_8\omega_5 + 6\omega_5\omega_6 - 6\omega_7\omega_5\omega_6 - \omega_7\omega_8\omega_5\omega_6 + 6\omega_7\omega_8\omega_5 - 6\omega_7\omega_8 + 6\omega_7\omega_6)\frac{c_s^2\delta_l^3\rho v_2}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} +$$
$$(-\omega_8\omega_5 + \omega_7^2 - \omega_7^2\omega_5 + \omega_7\omega_8\omega_5 + \omega_7\omega_5 - \omega_7\omega_8)\frac{c_s^2\delta_l^3\rho v_1}{\omega_7^2\omega_8\omega_5\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_3^2} + (-12 + 12\omega_7 - \omega_7^2)\frac{c_s^4\delta_l^3}{6\omega_7^2\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} +$$
$$(12\omega_{10}\omega_7 - 12\omega_{10}\omega_7^2 + 12\omega_7^2 - \omega_{10}\omega_7^2\omega_{16} - 12\omega_7\omega_{16} + 12\omega_{10}\omega_7\omega_{16} - 12\omega_{10}\omega_{16})\frac{c_s^2\delta_l^3\rho v_2}{6\omega_{10}\omega_7^2\delta_t\omega_{16}}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} +$$

$$
\begin{aligned}
&(2\omega_7-\omega_7^2+\omega_7\omega_{19}-2\omega_{19})\frac{v_3c_s^2\delta_l^3\rho}{\omega_7^2\omega_{19}\delta_t}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2}+C_{11}\frac{v_3\delta_l^3v_2}{12\omega_7\omega_{11}\omega_{19}\delta_t}\frac{\partial^3\rho}{\partial x_3^3}+C_{12}\frac{v_3\delta_l^3\rho}{6\omega_7^2\omega_{19}\delta_t}\frac{\partial^3 v_2}{\partial x_3^3}+C_{13}\frac{\delta_l^3\rho v_2}{12\omega_7\omega_{11}\omega_{19}\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}+\\
&C_{14}\frac{\delta_l^4v_2}{24\omega_5^2\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4\rho}{\partial x_1^4}+C_{15}\frac{\delta_l^4\rho v_2v_1}{12\omega_5^2\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^4}+C_{16}\frac{\delta_l^4\rho}{24\omega_5^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^4}+C_{17}\frac{\delta_l^4v_1}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2}+\\
&C_{18}\frac{\delta_l^4\rho}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2}+C_{19}\frac{\delta_l^4\rho v_2v_1}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}+C_{20}\frac{\delta_l^4v_2}{12\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}+\\
&C_{21}\frac{\delta_l^4\rho v_2v_1}{2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2}+C_{22}\frac{\delta_l^4\rho}{12\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2}+C_{23}\frac{\delta_l^4v_1}{4\omega_{10}^3\omega_5^2\omega_{15}^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3}+\\
&C_{24}\frac{\delta_l^4\rho}{12\omega_{10}^3\omega_5^3\omega_{15}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3}+C_{25}\frac{\delta_l^4\rho v_2v_1}{4\omega_{10}^3\omega_5^2\omega_{15}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3}+C_{26}\frac{\delta_l^4v_2}{12\omega_{10}^3\delta_t}\frac{\partial^4\rho}{\partial x_2^4}+C_{27}\frac{\delta_l^4\rho}{12\omega_{10}^3\delta_t}\frac{\partial^4 v_2}{\partial x_2^4}+\\
&C_{28}\frac{v_3\delta_l^4v_2v_1}{4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3}+C_{29}\frac{v_3\delta_l^4\rho v_2}{4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3}+C_{30}\frac{v_3\delta_l^4\rho v_1}{2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_3}+\\
&C_{31}\frac{\delta_l^4\rho v_2v_1}{12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}+C_{32}\frac{2v_3c_s^4\delta_l^4}{\omega_7^2\omega_8^2\omega_5^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3}+C_{33}\frac{v_3c_s^2\delta_l^4\rho v_1}{\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3}+\\
&C_{34}\frac{v_3c_s^2\delta_l^4\rho v_2}{2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\delta_t\omega_{16}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}+C_{35}\frac{c_s^2\delta_l^4\rho}{12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\delta_t\omega_{16}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}+\\
&C_{36}\frac{v_3\delta_l^4v_2v_1}{\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\delta_t\omega_{16}^2}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3}+C_{37}\frac{v_3\delta_l^4\rho v_2}{2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\delta_t\omega_{16}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}+C_{38}\frac{v_3\delta_l^4\rho v_1}{\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\delta_t\omega_{16}^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3}\\
&+C_{39}\frac{\delta_l^4\rho v_2v_1}{2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\delta_t\omega_{16}^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3}+C_{40}\frac{v_3\delta_l^4}{4\omega_{10}^3\omega_7^2\delta_t\omega_{16}^2}\frac{\partial^4\rho}{\partial x_2^3\partial x_3}+C_{41}\frac{v_3\delta_l^4\rho v_2}{4\omega_{10}^3\omega_7^2\delta_t\omega_{16}^2}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}+\\
&C_{42}\frac{\delta_l^4\rho}{12\omega_{10}^3\omega_7^2\delta_t\omega_{16}^2}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}+C_{43}\frac{\delta_l^4}{12\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}+C_{44}\frac{\delta_l^4\rho}{4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}+\\
&C_{45}\frac{\delta_l^4\rho}{4\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2}+C_{46}\frac{v_3\delta_l^4\rho}{2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2}+\\
&C_{47}\frac{\delta_l^4}{2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}\delta_t\omega_{16}}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2}+C_{48}\frac{\delta_l^4\rho}{12\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\delta_t\omega_{16}}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2}+\\
&C_{49}\frac{\delta_l^4\rho v_2}{2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\delta_t\omega_{16}^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2}+C_{50}\frac{\delta_l^4\rho}{2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2\delta_t\omega_{16}}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2}+\\
&C_{51}\frac{\delta_l^4v_2}{12\omega_{10}^3\omega_7^2\omega_{23}\omega_{19}\delta_t\omega_{16}^2}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}+C_{52}\frac{\delta_l^4\rho}{12\omega_{10}^3\omega_7^2\omega_{23}\omega_{19}\delta_t\omega_{16}^2}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2}+C_{53}\frac{v_3\delta_l^4\rho v_2}{2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\delta_t\omega_{16}^2}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}+\\
&C_{54}\frac{v_3\delta_l^4v_2v_1}{4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3}+C_{55}\frac{v_3\delta_l^4\rho v_2}{12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}+C_{56}\frac{v_3\delta_l^4\rho v_1}{2\omega_7^3\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_3^3}+\\
&C_{57}\frac{\delta_l^4\rho v_2v_1}{4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3}+C_{58}\frac{v_3\delta_l^4}{12\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\delta_t\omega_{16}}\frac{\partial^4\rho}{\partial x_2\partial x_3^3}+C_{59}\frac{v_3\delta_l^4\rho v_2}{12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\delta_t\omega_{16}^2}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3}+\\
&C_{60}\frac{\delta_l^4\rho}{12\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\delta_t\omega_{16}}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3}+C_{61}\frac{\delta_l^4v_2}{24\omega_7^2\omega_{11}^2\omega_{19}^2\delta_t}\frac{\partial^4\rho}{\partial x_3^4}+C_{62}\frac{\delta_l^4\rho}{24\omega_7^3\omega_{19}^2\delta_t}\frac{\partial^4 v_2}{\partial x_3^4}+C_{63}\frac{v_3\delta_l^4\rho v_2}{12\omega_7^2\omega_{11}^2\omega_{19}^2\delta_t}\frac{\partial^4 v_3}{\partial x_3^4}=0,
\end{aligned}
$$

where:

$$
\begin{aligned}
C_1 &= -18c_s^2\omega_5\omega_{12}-36c_s^2\omega_9-12\omega_9v_1^2+3c_s^2\omega_5\omega_9\omega_{12}+6\omega_5\omega_{12}-6\omega_5\omega_{12}v_1^2-6\omega_5\omega_9+12\omega_{12}v_1^2+6\omega_5\omega_9v_1^2+36c_s^2\omega_{12}+12\omega_9-\omega_5\omega_9\omega_{12}-\\
&12\omega_{12}+\omega_5\omega_9\omega_{12}v_1^2+18c_s^2\omega_5\omega_9\\
C_2 &= -6c_s^2\omega_5\omega_{12}-12c_s^2\omega_9-36\omega_9v_1^2+c_s^2\omega_5\omega_9\omega_{12}+6\omega_5\omega_{12}-18\omega_5\omega_{12}v_1^2-6\omega_5\omega_9+36\omega_{12}v_1^2+18\omega_5\omega_9v_1^2+12c_s^2\omega_{12}+12\omega_9-\omega_5\omega_9\omega_{12}-\\
&12\omega_{12}+3\omega_5\omega_9\omega_{12}v_1^2+6c_s^2\omega_5\omega_9\\
C_3 &= 15c_s^2\omega_5\omega_{12}-3\omega_5\omega_{12}+6\omega_5+3\omega_5\omega_{12}v_1^2-6\omega_5v_1^2+\omega_5^2\omega_{12}+3\omega_5^2v_1^2-12c_s^2\omega_{12}-3\omega_5^2+3c_s^2\omega_5^2-\omega_5^2\omega_{12}v_1^2-6c_s^2\omega_5-3c_s^2\omega_5^2\omega_{12}\\
C_4 &= -\omega_{10}^2\omega_5+\omega_{10}\omega_{15}v_2^2+3\omega_{10}^2c_s^2\omega_5-\omega_{10}\omega_{15}-\omega_{10}\omega_5v_2^2+\omega_{10}^2-\omega_{10}^2v_2^2+3\omega_{10}c_s^2\omega_{15}+\omega_{10}^2\omega_5v_2^2+\omega_{10}\omega_5\omega_{15}-\omega_5\omega_{15}+3c_s^2\omega_5\omega_{15}-\\
&3\omega_{10}c_s^2\omega_5-3\omega_{10}c_s^2\omega_5\omega_{15}-3\omega_{10}^2c_s^2+\omega_{10}\omega_5-\omega_{10}\omega_5\omega_{15}v_2^2+\omega_5\omega_{15}v_2^2\\
C_5 &= 12\omega_{10}^2\omega_5-12\omega_{10}^2c_s^2\omega_5-6\omega_{10}\omega_5^2\omega_{15}v_2^2+36c_s^2\omega_5^2\omega_{15}+12\omega_5^2\omega_{15}v_2^2-18\omega_{10}c_s^2\omega_5^2\omega_{15}+42\omega_{10}^2c_s^2\omega_5\omega_{15}+6\omega_{10}\omega_5^2\omega_{15}-12\omega_5^2\omega_{15}+\\
&12\omega_{10}^2\omega_5^2v_2^2+12\omega_{10}^2c_s^2\omega_5^2-12\omega_{10}^2\omega_5^2+6\omega_{10}^2\omega_5\omega_{15}v_2^2-6\omega_{10}^2\omega_5\omega_{15}-12\omega_{10}^2\omega_5v_2^2+12\omega_{10}\omega_5^2+3\omega_{10}^2\omega_5^2\omega_{15}-11\omega_{10}^2c_s^2\omega_5^2\omega_{15}-12\omega_{10}c_s^2\omega_5^2-\\
&12\omega_{10}\omega_5^2v_2^2-24\omega_{10}^2c_s^2\omega_{15}-3\omega_{10}^2\omega_5^2\omega_{15}v_2^2-24\omega_{10}c_s^2\omega_5\omega_{15}\\
C_6 &= -\omega_{10}^2\omega_5+3\omega_{10}\omega_{15}v_2^2+\omega_{10}^2c_s^2\omega_5-\omega_{10}\omega_{15}-3\omega_{10}\omega_5v_2^2+\omega_{10}^2-3\omega_{10}^2v_2^2+\omega_{10}c_s^2\omega_{15}+3\omega_{10}^2\omega_5v_2^2+\omega_{10}\omega_5\omega_{15}-\omega_5\omega_{15}+c_s^2\omega_5\omega_{15}-\\
&\omega_{10}c_s^2\omega_5-\omega_{10}c_s^2\omega_5\omega_{15}-\omega_{10}^2c_s^2+\omega_{10}\omega_5-3\omega_{10}\omega_5\omega_{15}v_2^2+3\omega_5\omega_{15}v_2^2\\
C_7 &= 12\omega_{10}c_s^2+\omega_{10}^2c_s^4-12c_s^2+24\omega_{10}^2c_s^2v_2^2-7\omega_{10}^2v_2^2+36v_2^4-36\omega_{10}v_2^4-144\omega_{10}c_s^2v_2^2+7\omega_{10}^2v_2^4-36v_2^2+144c_s^2v_2^2+36\omega_{10}v_2^2-12\omega_{10}c_s^4-\omega_{10}^2c_s^2+12c_s^4\\
C_8 &= \omega_{10}^2\omega_7v_2^2+\omega_{10}\omega_7+3\omega_7c_s^2\omega_{16}-3\omega_{10}\omega_7c_s^2\omega_{16}+\omega_7v_2^2\omega_{16}-\omega_{10}\omega_7v_2^2\omega_{16}+\omega_{10}^2-\omega_{10}^2v_2^2-3\omega_{10}\omega_7c_s^2-\omega_7\omega_{16}+\omega_{10}\omega_7\omega_{16}+\omega_{10}v_2^2\omega_{16}+\\
&3\omega_{10}^2\omega_7c_s^2-\omega_{10}^2\omega_7-\omega_{10}\omega_7v_2^2+3\omega_{10}c_s^2\omega_{16}-3\omega_{10}^2c_s^2-\omega_{10}\omega_{16}\\
C_9 &= 3\omega_{10}^2\omega_7v_2^2+\omega_{10}\omega_7+\omega_7c_s^2\omega_{16}-\omega_{10}\omega_7c_s^2\omega_{16}+3\omega_7v_2^2\omega_{16}-3\omega_{10}\omega_7v_2^2\omega_{16}+\omega_{10}^2-3\omega_{10}^2v_2^2-\omega_{10}\omega_7c_s^2-\omega_7\omega_{16}+\omega_{10}\omega_7\omega_{16}+\\
&3\omega_{10}v_2^2\omega_{16}+\omega_{10}^2\omega_7c_s^2-\omega_{10}^2\omega_7-3\omega_{10}\omega_7v_2^2+\omega_{10}c_s^2\omega_{16}-\omega_{10}^2c_s^2-\omega_{10}\omega_{16}\\
C_{10} &= -3\omega_{10}^2\omega_7^2v_2^2\omega_{16}-12\omega_{10}^2\omega_7v_2^2-24\omega_{10}^2c_s^2\omega_{16}-12\omega_{10}\omega_7^2v_2^2-24\omega_{10}\omega_7c_s^2\omega_{16}-6\omega_{10}^2\omega_7\omega_{16}+12\omega_{10}\omega_7^2+12\omega_{10}^2\omega_7^2c_s^2-11\omega_{10}^2\omega_7^2c_s^2\omega_{16}-\\
&12\omega_7^2\omega_{16}+6\omega_{10}\omega_7^2\omega_{16}+12\omega_7^2v_2^2\omega_{16}-12\omega_{10}\omega_7^2c_s^2-6\omega_{10}\omega_7^2v_2^2\omega_{16}+42\omega_{10}^2\omega_7c_s^2\omega_{16}-12\omega_{10}^2\omega_7^2+3\omega_{10}^2\omega_7^2\omega_{16}-12\omega_{10}^2\omega_7c_s^2+12\omega_{10}^2\omega_7+
\end{aligned}
$$

$6\omega_{10}^2\omega_7v_2^2\omega_{16} + 36\omega_7^2c_s^2\omega_{16} + 12\omega_{10}^2\omega_7^2v_2^2 - 18\omega_{10}\omega_7^2c_s^2\omega_{16}$

$C_{11} = -18\omega_7c_s^2\omega_{19} + 3\omega_7c_s^2\omega_{11}\omega_{19} - 12v_3^2\omega_{11} + \omega_7v_3^2\omega_{11}\omega_{19} + 12\omega_{11} + 12v_3^2\omega_{19} - \omega_7\omega_{11}\omega_{19} + 18\omega_7c_s^2\omega_{11} - 36c_s^2\omega_{11} - 6\omega_7v_3^2\omega_{19} + 6\omega_7\omega_{19} - 6\omega_7\omega_{11} + 6\omega_7v_3^2\omega_{11} - 12\omega_{19} + 36c_s^2\omega_{19}$

$C_{12} = 15\omega_7c_s^2\omega_{19} + 6\omega_7 - 6\omega_7v_3^2 + \omega_7^2\omega_{19} - \omega_7^2v_3^2\omega_{19} - 3\omega_7^2 - 6\omega_7c_s^2 + 3\omega_7^2c_s^2 + 3\omega_7v_3^2\omega_{19} - 3\omega_7\omega_{19} + 3\omega_7^2v_3^2 - 3\omega_7^2c_s^2\omega_{19} - 12c_s^2\omega_{19}$

$C_{13} = -6\omega_7c_s^2\omega_{19} + \omega_7c_s^2\omega_{11}\omega_{19} - 36v_3^2\omega_{11} + 3\omega_7v_3^2\omega_{11}\omega_{19} + 12\omega_{11} + 36v_3^2\omega_{19} - \omega_7\omega_{11}\omega_{19} + 6\omega_7c_s^2\omega_{11} - 12c_s^2\omega_{11} - 18\omega_7v_3^2\omega_{19} + 6\omega_7\omega_{19} - 6\omega_7\omega_{11} + 18\omega_7v_3^2\omega_{11} - 12\omega_{19} + 12c_s^2\omega_{19}$

$C_{14} = -144c_s^2\omega_5\omega_9\omega_{12}v_1^2 + c_s^2\omega_5^2\omega_9^2\omega_{12}^2 - 96\omega_5\omega_9^2\omega_{12}v_1^2 - 48\omega_9^2\omega_{12}v_1^4 + 24c_s^4\omega_9\omega_{12}^2 + 216c_s^2\omega_9\omega_{12}^2v_1^2 - 48\omega_5\omega_9\omega_{12}v_1^4 + 48\omega_9\omega_{12}^2v_1^4 + 24c_s^4\omega_5\omega_{12}^2 + 96\omega_5\omega_9\omega_{12}^2v_1^2 + 48c_s^2\omega_5\omega_9\omega_{12}^2 + 12c_s^4\omega_5^2\omega_9^2 + 48c_s^4\omega_5\omega_9^2\omega_{12} - 216c_s^2\omega_9^2\omega_{12}v_1^2 + 24\omega_5\omega_9^2v_1^2 - 30\omega_5^2\omega_9^2\omega_{12}v_1^4 + 72\omega_5\omega_{12}^2v_1^4 - 24c_s^2\omega_9\omega_{12}^2 + 36\omega_5^2\omega_{12}^2v_1^2 - 126c_s^2\omega_5^2\omega_9\omega_{12}v_1^2 - 24\omega_5^2\omega_9\omega_{12}v_1^2 + 12\omega_5^2\omega_9^2v_1^4 + 36\omega_5^2\omega_9\omega_{12}^2v_1^4 - 24c_s^2\omega_5\omega_{12}^2 + 72c_s^2\omega_5^2\omega_9^2v_1^2 + 14c_s^4\omega_5^2\omega_9\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^2 + 12c_s^2\omega_5^2\omega_9^2\omega_{12} + 288c_s^2\omega_5\omega_{12}^2v_1^2 + 3\omega_5^2\omega_9^2\omega_{12}^2v_1^2 + 150c_s^2\omega_5^2\omega_9\omega_{12}^2v_1^2 - 36\omega_5^2\omega_{12}^2v_1^4 + 12c_s^2\omega_5^2\omega_{12}^2 - 24c_s^4\omega_9^2\omega_{12} + 24\omega_5^2\omega_9\omega_{12}v_1^4 - c_s^4\omega_5^2\omega_9^2\omega_{12}^2 + 24c_s^2\omega_5\omega_9^2 - 12\omega_5^2\omega_9^2v_1^2 - 24\omega_5\omega_9^2v_1^4 + 72c_s^2\omega_5^2\omega_9\omega_{12}v_1^2 + 30\omega_5^2\omega_9^2\omega_{12}v_1^2 - 72\omega_5\omega_{12}^2v_1^2 - 48c_s^4\omega_5\omega_9\omega_{12}^2 - 144c_s^2\omega_5\omega_9^2v_1^2 - 3\omega_5^2\omega_9^2\omega_{12}^2v_1^4 - 36\omega_5^2\omega_9\omega_{12}^2v_1^2 - 12c_s^2\omega_5^2\omega_9^2\omega_{12}^2v_1^2 - 144c_s^2\omega_5^2\omega_{12}^2v_1^2 - 48c_s^2\omega_5\omega_9^2\omega_{12} + 24c_s^2\omega_9^2\omega_{12} - 12c_s^4\omega_5^2\omega_{12}^2 - 24c_s^4\omega_5\omega_9^2 + 432c_s^2\omega_5\omega_9^2\omega_{12}v_1^2 + 48\omega_5\omega_9\omega_{12}v_1^2 + 96\omega_5\omega_9^2\omega_{12}v_1^4 + 48\omega_9^2\omega_{12}v_1^2 - 14c_s^2\omega_5^2\omega_9\omega_{12}^2 - 432c_s^2\omega_5\omega_9\omega_{12}^2v_1^2 - 48\omega_9\omega_{12}^2v_1^2 - 96\omega_5\omega_9\omega_{12}^2v_1^4 - 12c_s^4\omega_5^2\omega_9^2\omega_{12}$

$C_{15} = -25\omega_5^2\omega_9\omega_{12}^2 - 3c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 168\omega_5\omega_9^2\omega_{12}v_1^2 - 48\omega_5\omega_{12}^2 - 12\omega_5^2\omega_9^2 - 36\omega_9\omega_{12}^2 - 168\omega_5\omega_9\omega_{12}^2v_1^2 - 120c_s^2\omega_5\omega_9\omega_{12}^2 - 48\omega_5\omega_9^2v_1^2 + 60c_s^2\omega_9\omega_{12}^2 - 60\omega_5^2\omega_{12}^2v_1^2 + 36\omega_5^2\omega_9\omega_{12}v_1^2 - 24c_s^2\omega_5\omega_9\omega_{12} - 72\omega_5\omega_9^2\omega_{12} + 72c_s^2\omega_5\omega_{12}^2 + 24c_s^2\omega_5^2\omega_9^2 - 33c_s^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_5^2\omega_9\omega_{12} - 5\omega_5^2\omega_9^2\omega_{12}^2v_1^2 - 36c_s^2\omega_5^2\omega_{12}^2 - 48c_s^2\omega_5\omega_9^2 + 24\omega_5^2\omega_9^2v_1^2 + 12c_s^2\omega_5^2\omega_9\omega_{12} + 21\omega_5^2\omega_9^2\omega_{12} - 51\omega_5^2\omega_9^2\omega_{12}v_1^2 + 120\omega_5\omega_{12}^2v_1^2 + 61\omega_5^2\omega_9\omega_{12}^2v_1^2 + 36\omega_9^2\omega_{12} + 120c_s^2\omega_5\omega_9^2\omega_{12} + 24\omega_5\omega_9\omega_{12} - 60c_s^2\omega_9^2\omega_{12} + 72\omega_5\omega_9\omega_{12}^2 - 72\omega_5\omega_9\omega_{12}v_1^2 - 84\omega_9^2\omega_{12}v_1^2 + 2\omega_5^2\omega_9^2\omega_{12}^2 + 39c_s^2\omega_5^2\omega_9\omega_{12}^2 + 84\omega_9\omega_{12}^2v_1^2 + 24\omega_5^2\omega_{12}^2 + 24\omega_5\omega_9^2$

$C_{16} = 6c_s^2\omega_5^3\omega_{12}^2v_1^2 + 18\omega_5^3\omega_{12}v_1^2 - 96c_s^2\omega_{12}^2v_1^2 + 12\omega_5^3v_1^4 - 24c_s^2\omega_5\omega_{12} - 48c_s^4\omega_5\omega_{12}^2 + 3\omega_5^3\omega_{12}^2v_1^4 - 24\omega_5^2v_1^4 + 24\omega_5\omega_{12}^2v_1^4 + 48c_s^2\omega_5^2\omega_{12}v_1^2 + 24\omega_5^2\omega_{12}^2v_1^2 + 24c_s^4\omega_5\omega_{12} + 72\omega_5^2\omega_{12}v_1^4 + 12c_s^2\omega_5\omega_{12}^2 + 24c_s^4\omega_{12}^2 + 156c_s^2\omega_5\omega_{12}^2v_1^2 + 48\omega_5\omega_{12}v_1^2 - 24\omega_5^2\omega_{12}^2v_1^4 - 8c_s^2\omega_5^2\omega_{12}^2 + 24\omega_5^2v_1^2 - 24c_s^2\omega_5\omega_{12}v_1^2 - 24\omega_5\omega_{12}^2v_1^2 - 3c_s^4\omega_5^3\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{12} - 48\omega_5\omega_{12}v_1^4 + 12c_s^2\omega_5^3v_1^2 - 72c_s^2\omega_5^2\omega_{12}^2v_1^2 - 72\omega_5^2\omega_{12}v_1^2 - 24c_s^4\omega_5^2\omega_{12} - 12\omega_5^3v_1^2 + 24c_s^4\omega_5^2\omega_{12}^2 - 18\omega_5^3\omega_{12}v_1^4 + c_s^2\omega_5^3\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{12}v_1^2 - 3\omega_5^3\omega_{12}^2v_1^2 - 24c_s^2\omega_5^2v_1^2 + 6c_s^4\omega_5^3\omega_{12} + 24c_s^2\omega_5^2\omega_{12}$

$C_{17} = 12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 36c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 - 3\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_1^2 + 3\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 24\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 - 36\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_2^2v_1^2 + 12\omega_{10}\omega_5^3\omega_9^2\omega_{12}^2v_2^2 - 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_1^2 - 36\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 48\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 27\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_1^2 - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 36\omega_{10}c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 6\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2v_1^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2 - 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 36\omega_{10}c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12} - \omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_5^3\omega_9^2\omega_{12}^2v_2^2 - 18\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_2^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_1^2 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_2^2 + 18\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2v_2^2 - 45\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 54\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 36c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_1^2 - 36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 - 18\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2v_2^2v_1^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_1^2 + 3\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36\omega_{10}c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 - 24\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 12\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_2^2 + 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 12\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2v_1^2 + 6\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_2^2 - 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2v_2^2v_1^2 - 12\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2v_2^2 + 36\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2 - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2v_2^2v_1^2 - 6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 + 15\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2v_2^2 + 12\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2v_2^2v_1^2 - 18c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 18\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_2^2 + 18c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 36\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 24\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2v_1^2 - 9\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 144\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 - 12\omega_{10}c_s^2\omega_5^3\omega_9^2\omega_{12}^2v_1^2 + 12\omega_{10}c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 48\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 + 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2v_1^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2v_2^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_1^2 + 18\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 36\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}v_2^2 + 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 36c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2 + 24\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 - 15\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 + 12\omega_{10}c_s^2\omega_5^2\omega_9^2\omega_{12}^2v_1^2 - 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_1^2 + 12\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2v_2^2 + 12\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2v_1^2$

$C_{18} = 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 30\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_1^2 - \omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 72\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 - 12\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_2^2v_1^2 + 12\omega_{10}\omega_5^3\omega_9^2\omega_{12}^2v_2^2 - 36\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 18\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_1^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 48\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 9\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_1^2 - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 18\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2v_1^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2 - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 12\omega_{10}c_s^4\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_5^3\omega_9^2\omega_{12}^2v_2^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_2^2 - 36\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 15\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 + 60\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_2^2 + 6\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2v_2^2 - 15\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 18\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 12c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_1^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 - 6\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 36\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2v_2^2v_1^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$

$48\omega_{10}c_s^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 + 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 15\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2 + 36\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_1^2 -$
$6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 72\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 - 24\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 12\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_2^2 +$
$18\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2v_1^2 - 36\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2v_1^2 + 6\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_2^2 - 36\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2v_2^2v_1^2 - 12\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2v_2^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2 -$
$6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 12\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2 - 18c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 18\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2v_2^2v_1^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 18\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 +$
$6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2v_2^2 + 36\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2v_2^2v_1^2 - 6c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 +$
$6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_2^2 + 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 24\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 -$
$36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2v_1^2 - 9\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 48\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 - 36\omega_{10}c_s^2\omega_5^3\omega_9^2\omega_{12}^2v_1^2 + 12\omega_{10}c_s^2\omega_5^3\omega_9^2\omega_{12}^2 +$
$144\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 - 18\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 + 54\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_1^2 + 24\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2v_1^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 +$
$12\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 - 36\omega_{10}\omega_5^3\omega_9^2\omega_{12}^2v_2^2v_1^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2v_2^2 - 36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 -$
$24\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 15\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2v_2^2 - 12c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^3\omega_9^2\omega_{12}^2v_2^2 - 72\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 +$
$27\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 + 12\omega_{10}c_s^4\omega_5^2\omega_9^2\omega_{12}^2 - 18\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2v_2^2 - 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} -$
$102\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_1^2 - 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 - 12c_s^2\omega_5^3\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}v_2^2 + 18\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2v_1^2 + 12c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 +$
$24\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 12\omega_{10}c_s^2\omega_5^2\omega_9^2\omega_{12}^2v_2^2 - 108\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 + 36\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 + 36\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 +$
$6\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2 - 36c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_1^2 + 36\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}v_1^2 + 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_2^2 + 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 18\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_2^2v_1^2 +$
$60\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_1^2 + 36\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2v_2^2v_1^2 - 5\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 36c_s^2\omega_5^3\omega_9^2\omega_{12}^2v_1^2 -$
$5\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12c_s^2\omega_5^3\omega_9^2\omega_{12}^2v_2^2 - 12\omega_{10}c_s^4\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2v_2^2 - 24\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2 +$
$36\omega_5^3\omega_9^2\omega_{12}^2v_2^2v_1^2 + 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2v_2^2 + 18\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + \omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 +$
$6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}v_2^2 + 18\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 12c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2 + 72\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2v_1^2 -$
$45\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_2^2v_1^2 + 36\omega_{10}c_s^2\omega_5^2\omega_9^2\omega_{12}^2v_1^2 - 36\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_1^2 + 12\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2v_2^2 + 36\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2v_1^2$

$C_{19} = 24\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 + 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}v_1^2 + 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 +$
$24\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 + 72\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 72\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$42\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 24\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 -$
$36\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}v_1^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2 + 24\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 84\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2 + 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_1^2 - 132\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 84\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 +$
$12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2 + 12\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2 - 18\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_1^2 +$
$36\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 96\omega_{10}^2c_s^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 + 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 66\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}v_1^2 - 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2v_1^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 36\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2v_1^2 - 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 +$
$66\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}v_1^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 90\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 +$
$12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 48\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2 - 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2 -$
$24c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2v_1^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}v_1^2 + 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2v_1^2 - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_1^2 + 24\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 -$
$24\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}v_1^2 + 24c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$24\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_1^2 + 18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 156\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}v_1^2 +$
$12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - \omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2v_1^2 +$
$60\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_1^2 - 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 + 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 18\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$48\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 66\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2v_1^2$

$C_{20} =$
$12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3\omega_5^2\omega_{21}\omega_{12}v_2^2v_1^2 - 36\omega_{10}^3c_s^4\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}^2\omega_5^3\omega_{15}\omega_{12}v_2^2v_1^2 - 36\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_{12}v_1^2 - 12\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 +$
$108\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 - 18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12}v_2^2 - 12\omega_{10}^3\omega_5^3\omega_{21}\omega_{12}v_1^2 + 24\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12}v_1^2 - 12\omega_{10}^3\omega_5^2\omega_{15}^2v_1^2 -$
$12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2v_2^2v_1^2 - 96\omega_{10}^3c_s^4\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{12} - 36\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2v_1^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2 - 36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$36\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12}v_1^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{12}v_2^2 + 150\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 24\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 - 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_1^2 -$
$36\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{12}v_1^2 + 30\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12}v_2^2 + 6\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12}v_1^2 -$
$12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2v_2^2 + \omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2 + 12\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{12} + 6\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12}v_2^2v_1^2 + 180\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 72\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12}v_1^2 +$
$6\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 18\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 + 18\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_2^2 - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12}v_2^2 - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12} -$
$18\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12} + 12\omega_{10}^3\omega_5^3\omega_{15}\omega_{12}v_1^2 - 36\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 + 12\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{12} + 6\omega_{10}^2c_s^3\omega_5^3\omega_{21}\omega_{15}^2v_2^2 - 2\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2 -$
$12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2 + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2v_2^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 42\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_{12} -$
$12\omega_{10}^3\omega_5^2\omega_{15}\omega_{12}v_1^2 + 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_2^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12} - 36\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2\omega_{12} - 24\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 + 36c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} -$
$18\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2 - 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 + 2\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3\omega_5^2\omega_{21}\omega_{12}v_1^2 - 36\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 +$
$24\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_{12} + 18\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_1^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{12}v_2^2v_1^2 + 12\omega_{10}^3\omega_5^2\omega_{15}\omega_{12}v_2^2v_1^2 + 36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_1^2 -$
$6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 18\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2v_1^2 - 24\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 36\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 48\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2v_1^2 +$
$18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 84\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_{12}v_1^2 - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2 +$
$12\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_{12} - 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2v_1^2 + 18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2 - 12\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12}v_1^2 + 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{12}v_1^2 - \omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 + 12\omega_{10}^3\omega_5^2\omega_{15}^2v_2^2v_1^2 + 12\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2v_2^2v_1^2 - 24\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 + 36\omega_{10}^4c_s^4\omega_5^3\omega_{15}\omega_{12} +$
$12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_{12} - 18\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_1^2 + 12\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 - 36\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_{12}v_2^2 +$
$6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2v_1^2 + 12\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_2^2 + 18\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2\omega_{12} -$

$12\omega_{10}^2\omega_5^3\omega_{15}\omega_{12}v_1^2 + 18\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12}v_1^2 + 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12}v_2^2 + 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 -$
$12\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12}v_2^2v_1^2 - 12\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2 + 18\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 36\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{12}v_1^2 + 36\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2 + 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2v_2^2$

$C_{21} = -4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 15\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2v_2^2 + 13\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - \omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_2^2 -$
$16\omega_{10}^3c_s^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_2^2 - 24\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - \omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 -$
$5\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_2^2 + 8\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 6\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 - 3\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 - \omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$
$4\omega_{10}^3\omega_5^2\omega_{21}\omega_9\omega_{12}^2v_2^2 + 4\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2v_2^2 + 2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12}v_2^2 - 4\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2 + 4\omega_{10}^3\omega_5^2\omega_{15}\omega_9\omega_{12}^2v_2^2 - 2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + \omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$7\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 26\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 5\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 - 8\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 3\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$4\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 4\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12}^2 + \omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 - 4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_2^2 +$
$8\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 4\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 5\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 3\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_2^2 - 2\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$4\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 8\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 6\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_2^2 + 4\omega_{10}^3\omega_5^3\omega_{15}\omega_9\omega_{12}^2 -$
$9\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 - 8\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}^3\omega_5^3\omega_{15}\omega_9\omega_{12}^2v_2^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 9\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_2^2 + 4\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 11\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$4\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2v_2^2 - 4\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^3\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 4\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$
$2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 - 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 4\omega_{10}^3\omega_5^2\omega_{21}\omega_9\omega_{12}^2 -$
$2\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 8\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2v_2^2 + 2\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$2\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + \omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2v_2^2 - 2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 - 4\omega_{10}^3\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12}v_2^2 -$
$7\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - \omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 3\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2 + 4\omega_{10}^3\omega_5^3\omega_{21}\omega_9\omega_{12}^2v_2^2 - 6\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_2^2$

$C_{22} =$
$-6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^3\omega_5^2\omega_{21}\omega_{12}v_2^2v_1^2 - 12\omega_{10}^3c_s^4\omega_5^3\omega_{15}\omega_{12} + 36\omega_{10}^2\omega_5^3\omega_{15}\omega_{12}v_2^2v_1^2 - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_{12}v_1^2 - 36\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 +$
$36\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 - 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 60\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12}v_2^2 - 12\omega_{10}^3\omega_5^3\omega_{21}\omega_{12}v_1^2 + 24\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12}v_1^2 - 12\omega_{10}^3\omega_5^2\omega_{15}^2v_1^2 -$
$36\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2v_2^2v_1^2 - 12\omega_{10}^3c_s^4\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2v_1^2 + 6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12}v_1^2 + 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{12}v_2^2 +$
$24\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 72\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 - 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{12}v_1^2 + 12\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 +$
$36\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12}v_2^2 + 6\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12}v_1^2 - 36\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2v_2^2 + 18\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12}v_2^2v_1^2 + 18\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 24\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12}v_1^2 -$
$12\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 54\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 - 132\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_2^2 - 36\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_{12}v_2^2 -$
$12\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12} - 6\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12} + 12\omega_{10}^3\omega_5^3\omega_{15}\omega_{12}v_1^2 - 36\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 + 18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2v_2^2 - 18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2 +$
$72\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2 + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 72\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 - 18\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2v_2^2 - 24\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3\omega_5^2\omega_{15}\omega_{12}v_1^2 +$
$18\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_2^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2\omega_{12} - 24\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 108\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2 + 60\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_2^2 +$
$24\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2 - 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3\omega_5^2\omega_{21}\omega_{12}v_1^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 +$
$72\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_{12} + 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_1^2 - 36\omega_{10}^2\omega_5^3\omega_{21}\omega_{12}v_2^2v_1^2 + 36\omega_{10}^3\omega_5^2\omega_{15}\omega_{12}v_2^2v_1^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} +$
$12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2v_1^2 - 24\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} +$
$6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2v_1^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 48\omega_{10}^3c_s^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 +$
$18\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2 + 12\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_{12} - 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2v_1^2 - 144\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2 + 36\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 +$
$12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12}v_1^2 + 12\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{12}v_1^2 - 18\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12}v_2^2v_1^2 +$
$180\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2 - 36\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_{12}v_2^2 + 12\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12}v_2^2 - 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 12\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_{12}v_1^2 - 36\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 +$
$36\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 - 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 6\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2 - 4\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 84\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12}v_2^2 - 24\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{12}v_2^2 +$
$108\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 + 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 18\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 12\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 36\omega_{10}^3\omega_5^3\omega_{15}\omega_{12}v_2^2v_1^2 +$
$12\omega_{10}^3c_s^4\omega_5^2\omega_{15}\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 18\omega_{10}^3\omega_5^3\omega_{15}^2v_2^2v_1^2 - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2 + 6\omega_{10}^3\omega_5^3\omega_{15}^2v_1^2 - 12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2v_1^2 -$
$\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 84\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12}v_2^2 + 24\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{12}v_2^2 + 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12}v_1^2 + 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{12}v_1^2 + 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 +$
$36\omega_{10}^3\omega_5^2\omega_{15}^2v_2^2v_1^2 + 12\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2v_2^2v_1^2 - 72\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 + 12\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_{12} -$
$6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_1^2 + 36\omega_{10}^3\omega_5^3\omega_{21}\omega_{12}v_2^2v_1^2 - 36\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_2^2v_1^2 - 12\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 + 78\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2 + 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2 +$
$12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2v_1^2 + 12\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 - 18\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}v_2^2 + 6\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{15}\omega_{12}v_1^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$
$6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12}v_1^2 + 36\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12}v_2^2 + 18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_2^2v_1^2 - 36\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12}v_2^2v_1^2 - 42\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2 +$
$12\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}v_1^2 - 12\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{12}v_1^2 + 12\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2 + 36\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2v_2^2$

$C_{23} = 4\omega_{10}^3c_s^2\omega_{15} + 24\omega_5^2\omega_{15}^2v_2^4 + 4\omega_{10}^3\omega_5^2v_2^4 - 13\omega_{10}^3\omega_5^2\omega_{15}v_2^4 - 20\omega_{10}\omega_5\omega_{15}^2v_2^2 - 12\omega_{10}c_s^4\omega_5^2\omega_{15}^2 - 4\omega_{10}^3c_s^4\omega_5 + 36\omega_{10}^2c_s^2\omega_{15}^2v_2^2 -$
$48\omega_{10}^2c_s^2\omega_5\omega_{15}v_2^2 - 36\omega_{10}\omega_5^2\omega_{15}^2v_2^4 - 144\omega_{10}c_s^2\omega_5^2\omega_{15}^2v_2^2 - 51\omega_{10}^3c_s^2\omega_5^2\omega_{15}v_2^2 + 8c_s^4\omega_5^2\omega_{15}^2 - 20\omega_{10}^3\omega_5\omega_{15}v_2^2 + 20\omega_{10}\omega_5^2\omega_{15}v_2^2 +$
$51\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2v_2^2 - 8\omega_{10}^3c_s^2\omega_5\omega_{15} + 8\omega_{10}^2c_s^2\omega_5\omega_{15}^2 + 4\omega_{10}^3\omega_5v_2^2 + 96c_s^2\omega_5^2\omega_{15}^2v_2^2 + 24\omega_{10}^3c_s^2\omega_5^2v_2^2 - 8\omega_{10}^2\omega_{15}^2v_2^2 + 4\omega_{10}c_s^2\omega_5^2\omega_{15} -$
$20\omega_{10}^2\omega_5\omega_{15}^2v_2^4 + 12\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 8c_s^2\omega_5^2\omega_{15}^2 - 24\omega_{10}^2c_s^2\omega_5^2v_2^2 - 13\omega_{10}^2\omega_5^2\omega_{15}^2v_2^2 + 4\omega_{10}^2\omega_5^2v_2^2 + 4\omega_{10}^2c_s^4\omega_{15}^2 + 8\omega_{10}^3\omega_{15}v_2^2 + 32\omega_{10}^2\omega_5^2\omega_{15}v_2^4 +$
$4\omega_{10}^2c_s^2\omega_5^2 + 8\omega_{10}^3c_s^4\omega_5\omega_{15} - 8\omega_{10}^2c_s^4\omega_5\omega_{15}^2 + 16\omega_{10}^2\omega_5\omega_{15}v_2^2 - 4\omega_{10}c_s^4\omega_5^2\omega_{15} + 4\omega_{10}^3c_s^4\omega_5^2 - 36\omega_{10}^3c_s^2\omega_{15}v_2^2 + 13\omega_{10}^2\omega_5^2v_2^4 - 4\omega_{10}^3c_s^4\omega_5^2\omega_{15} +$
$20\omega_{10}^2\omega_5\omega_{15}^2v_2^2 + 4\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2 - 4\omega_{10}^3c_s^4\omega_{15} - 8\omega_{10}^2c_s^2\omega_5^2\omega_{15} - 16\omega_{10}^2\omega_5\omega_{15}v_2^4 - 4\omega_{10}c_s^2\omega_5\omega_{15}^2 + 4\omega_{10}^3c_s^2\omega_5 - 4\omega_{10}^2\omega_5^2v_2^4 - 8\omega_{10}^3\omega_{15}v_2^4 -$
$32\omega_{10}^2\omega_{15}v_2^2 + 120\omega_{10}^2c_s^2\omega_5^2\omega_{15}v_2^2 - 4\omega_{10}^2c_s^2\omega_{15}^2 + 36\omega_{10}\omega_5^2\omega_{15}^2v_2^2 - 4\omega_{10}^2c_s^4\omega_5^2 + 4\omega_{10}^3c_s^2\omega_5^2\omega_{15} + 20\omega_{10}^3\omega_5\omega_{15}v_2^4 + 84\omega_{10}^3c_s^2\omega_5\omega_{15}v_2^2 -$
$4\omega_{10}^3\omega_5^2v_2^2 - 4\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 + 13\omega_{10}^3\omega_5^2\omega_{15}v_2^2 - 24\omega_{10}^3c_s^2\omega_5v_2^2 - 24\omega_5^2\omega_{15}^2v_2^2 + 20\omega_{10}\omega_5\omega_{15}^2v_2^4 + 72\omega_{10}c_s^2\omega_5\omega_{15}^2v_2^2 - 4\omega_{10}^3c_s^2\omega_5^2 + 8\omega_{10}^2c_s^4\omega_5^2\omega_{15} -$
$4\omega_{10}^3\omega_5v_2^4 + 8\omega_{10}^2\omega_{15}^2v_2^4 - 84\omega_{10}^2c_s^2\omega_5\omega_{15}^2v_2^2 + 4\omega_{10}c_s^4\omega_5\omega_{15}^2 - 72\omega_{10}c_s^2\omega_5^2\omega_{15}v_2^2 - 20\omega_{10}\omega_5^2\omega_{15}v_2^4$

$C_{24} = -12\omega_{10}^3\omega_5^2v_2^4 + 48\omega_{10}^3\omega_5^2\omega_{15}v_2^4 - 12\omega_{10}^2c_s^2\omega_5^3v_2^2 - 12c_s^2\omega_5^3\omega_{15}^2 - 12\omega_{10}c_s^4\omega_5^2\omega_{15}^2 - 60\omega_{10}^2\omega_5^3\omega_{15}v_2^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{15}^2 - 108\omega_{10}c_s^2\omega_5^2\omega_{15}^2v_2^2 -$
$24\omega_{10}^3c_s^4\omega_5\omega_{15}^2 + 30\omega_{10}^3c_s^2\omega_5^2\omega_{15}v_2^2 + 24\omega_{10}^3\omega_5\omega_{15}v_2^2 + 162\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2v_2^2 + 12\omega_{10}^3\omega_5\omega_{15}^2v_2^4 - 12\omega_{10}^3c_s^2\omega_5\omega_{15} + 18\omega_{10}^3\omega_5^2\omega_{15}^2v_2^2 -$
$12\omega_{10}^3c_s^2\omega_5^2v_2^2 + 102\omega_{10}^3c_s^2\omega_5\omega_{15}^2v_2^2 + 19\omega_{10}^2\omega_5^3\omega_{15}^2v_2^4 + 12\omega_{10}^2\omega_5^3v_2^2 + 12c_s^4\omega_5^3\omega_{15}^2 - 36\omega_{10}\omega_5^3\omega_{15}v_2^4 - 36\omega_{10}c_s^2\omega_5^3\omega_{15}v_2^2 + 12\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2v_2^2 +$
$12\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 12\omega_{10}c_s^4\omega_5^3\omega_{15}^2 + 4\omega_{10}^3\omega_5^3\omega_{15}^2v_2^4 + 12\omega_{10}^3\omega_5^3v_2^4 - 12\omega_{10}^2\omega_5^2\omega_{15}^2v_2^2 + 6\omega_{10}^3c_s^2\omega_5\omega_{15}^2 + 27\omega_{10}^3\omega_5^3\omega_{15}v_2^2 - 72\omega_5^3\omega_{15}^2v_2^2 -$
$48\omega_{10}^3c_s^2\omega_{15}^2v_2^2 + 12\omega_{10}^3c_s^2\omega_5^3v_2^2 - 24\omega_{10}^2\omega_5\omega_{15}v_2^4 + 12\omega_{10}^3c_s^4\omega_5\omega_{15} + 90\omega_{10}\omega_5^3\omega_{15}^2v_2^2 + 54\omega_{10}^2c_s^2\omega_5^3\omega_{15}v_2^2 + 252c_s^2\omega_5^3\omega_{15}^2v_2^2 - 4\omega_{10}^3\omega_5^3\omega_{15}^2v_2^2 +$
$12\omega_{10}^2\omega_5^2\omega_{15}^2v_2^4 - 18\omega_{10}^3c_s^4\omega_5^2\omega_{15} - \omega_{10}^2c_s^2\omega_5^3\omega_{15}^2 - 12\omega_{10}^3\omega_5^3v_2^2 - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15} + 6\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2 + 60\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2v_2^2 + 36\omega_{10}\omega_5^3\omega_{15}v_2^2 -$
$306\omega_{10}c_s^2\omega_5^3\omega_{15}^2v_2^2 - 90\omega_{10}\omega_5^3\omega_{15}^2v_2^4 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15} - \omega_{10}^3c_s^4\omega_5^3\omega_{15}^2 - 21\omega_{10}^3c_s^2\omega_5^3\omega_{15}v_2^2 + 72\omega_5^3\omega_{15}^2v_2^4 - 27\omega_{10}^3\omega_5^3\omega_{15}v_2^4 + 24\omega_{10}^2\omega_5^2\omega_{15}v_2^2 -$
$6\omega_{10}^2c_s^4\omega_5^3\omega_{15} - 5\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}v_2^2 + 18\omega_{10}^3c_s^2\omega_5^2\omega_{15} + \omega_{10}^2c_s^4\omega_5^3\omega_{15}^2 - 24\omega_{10}^3\omega_5\omega_{15}v_2^4 - 12\omega_{10}^3c_s^2\omega_5\omega_{15}v_2^2 + 12\omega_{10}^3\omega_5^2v_2^2 +$

$6\omega_{10}^3c_s^4\omega_5^3\omega_{15} - 6\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 - 48\omega_{10}^3\omega_5^2\omega_{15}v_2^2 + 12\omega_{10}^3c_s^4\omega_{15}^2 + 60\omega_{10}^2\omega_5^3\omega_{15}v_2^4 + 12\omega_{10}^2c_s^4\omega_5^2\omega_{15} - 18\omega_{10}^3\omega_5^2\omega_{15}^2v_2^4 - 48\omega_{10}^2c_s^2\omega_5\omega_{15}^2v_2^2 -$
$12\omega_{10}^2\omega_5^3v_2^4 - 19\omega_{10}^2\omega_5^3\omega_{15}^2v_2^2 - 12\omega_{10}^3\omega_5\omega_{15}^2v_2^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15} + 13\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2 - 81\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2v_2^2$

$C_{25} = -20\omega_{10}^3c_s^2\omega_{15} + 64\omega_{10}\omega_5\omega_{15}^2v_2^2 + 28\omega_{10}^2\omega_5\omega_{15}^2 + 68\omega_{10}^3\omega_5\omega_{15}v_2^2 - 64\omega_{10}\omega_5^2\omega_{15}v_2^2 + 48\omega_{10}\omega_5^2\omega_{15}^2 + 44\omega_{10}^3c_s^2\omega_5\omega_{15} - 32\omega_5^2\omega_{15}^2 +$
$17\omega_{10}^3\omega_5^2\omega_{15} - 8\omega_{10}^3\omega_5^2 - 44\omega_{10}^2c_s^2\omega_5\omega_{15}^2 - 16\omega_{10}^3\omega_5v_2^2 + 28\omega_{10}^2\omega_{15}^2v_2^2 - 32\omega_{10}c_s^2\omega_5^2\omega_{15} - 16\omega_{10}^2c_s^2\omega_5\omega_{15} - 72\omega_{10}c_s^2\omega_5^2\omega_{15}^2 + 24\omega_{10}\omega_5^2\omega_{15} +$
$48c_s^2\omega_5^2\omega_{15}^2 + 8\omega_{10}^3\omega_5 + 43\omega_{10}^2\omega_5^2\omega_{15}^2v_2^2 - 16\omega_{10}^2\omega_5^2v_2^2 - 28\omega_{10}^3\omega_{15}v_2^2 - 16\omega_{10}^2c_s^2\omega_5^2 + 8\omega_{10}^2\omega_5^2 - 48\omega_{10}^2\omega_5\omega_{15}v_2^2 + 16\omega_{10}^2\omega_5\omega_{15} - 68\omega_{10}^2\omega_5\omega_{15}^2v_2^2 -$
$40\omega_{10}^2\omega_5^2\omega_{15} + 56\omega_{10}^2c_s^2\omega_5^2\omega_{15} + 32\omega_{10}c_s^2\omega_5\omega_{15}^2 - 16\omega_{10}^3c_s^2\omega_5 + 104\omega_{10}^2\omega_5^2\omega_{15}v_2^2 - 24\omega_{10}\omega_5\omega_{15}^2 + 20\omega_{10}^2c_s^2\omega_{15}^2 - 120\omega_{10}\omega_5^2\omega_{15}^2v_2^2 -$
$25\omega_{10}^3c_s^2\omega_5^2\omega_{15} - 28\omega_{10}^3\omega_5\omega_{15} + 16\omega_{10}^3\omega_5^2v_2^2 + 25\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 - 43\omega_{10}^3\omega_5^2\omega_{15}v_2^2 + 80\omega_5^2\omega_{15}^2v_2^2 + 16\omega_{10}^3c_s^2\omega_5^2 - 12\omega_{10}^2\omega_{15}^2 - 17\omega_{10}^2\omega_5^2\omega_{15}^2 + 12\omega_{10}^3\omega_{15}$

$C_{26} = 12 + 198\omega_{10}c_s^2 - 18\omega_{10} + 10\omega_{10}^3v_2^2 + 82\omega_{10}^2c_s^4 - 132c_s^2 + 404\omega_{10}^2c_s^2v_2^2 + 8\omega_{10}^2 - 98\omega_{10}^2v_2^2 + 144v_2^4 - 216\omega_{10}v_2^4 - 5\omega_{10}^3c_s^4 - \omega_{10}^3 -$
$1008\omega_{10}c_s^2v_2^2 + 90\omega_{10}^2v_2^4 - 156v_2^2 + 672c_s^2v_2^2 + 234\omega_{10}v_2^2 + 6\omega_{10}^3c_s^2 - 216\omega_{10}c_s^4 - 9\omega_{10}^3v_2^4 - 78\omega_{10}^2c_s^2 + 144c_s^4 - 34\omega_{10}^3c_s^2v_2^2$

$C_{27} = 12 + 54\omega_{10}c_s^2 - 18\omega_{10} + 14\omega_{10}^3v_2^2 + 14\omega_{10}^2c_s^4 - 36c_s^2 + 252\omega_{10}^2c_s^2v_2^2 + 8\omega_{10}^2 - 154\omega_{10}^2v_2^2 + 504v_2^4 - 756\omega_{10}v_2^4 - \omega_{10}^3c_s^4 - \omega_{10}^3 -$
$648\omega_{10}c_s^2v_2^2 + 310\omega_{10}^2v_2^4 - 252v_2^2 + 432c_s^2v_2^2 + 378\omega_{10}v_2^2 + 2\omega_{10}^3c_s^2 - 36\omega_{10}c_s^4 - 29\omega_{10}^3v_2^4 - 22\omega_{10}^2c_s^2 + 24c_s^4 - 18\omega_{10}^3c_s^2v_2^2$

$C_{28} = 12\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}\omega_7c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6v_1^2 + 3\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 -$
$2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2\omega_6v_1^2 - 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2v_1^2 - 4\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6v_1^2 -$
$4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 4\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 +$
$2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 + 4\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2v_1^2 -$
$12\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6v_1^2 - 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 -$
$4\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 - 2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6 - 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 -$
$4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2v_1^2 + 6\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_5\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6v_1^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6v_1^2 +$
$4\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6 + 6c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 3\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - 12\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6v_1^2 -$
$12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6v_1^2 - 4\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2v_1^2 + 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6v_1^2 -$
$4\omega_{13}\omega_7\omega_8\omega_5^2\omega_9\omega_{12}\omega_6 - 12c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 +$
$9\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - 6\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}c_s^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$
$4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6v_1^2 + 3\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$
$4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6v_1^2 + 4\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2v_1^2 - 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6v_1^2 + 12\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 -$
$4\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - 9\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 +$
$4\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 + 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6v_1^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6v_1^2 - 4\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6v_1^2 -$
$12\omega_{13}c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6 -$
$4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 3\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6v_1^2 - 12\omega_{13}\omega_7c_s^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$
$8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6v_1^2 - 4\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 + 24\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 12\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 +$
$4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2v_1^2 - 4\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2\omega_6 +$
$12\omega_{13}\omega_7c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 - 24\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6v_1^2 + 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6 -$
$6\omega_{13}\omega_7c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 + 4\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6v_1^2 -$
$2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 + 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6$

$C_{29} = 4\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6v_1^2 + 9\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 -$
$2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2\omega_6v_1^2 - 12\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2v_1^2 - 12\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6v_1^2 -$
$4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 12\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 +$
$2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 + 12\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2v_1^2 -$
$4\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 24\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6v_1^2 - 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 + 12\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 -$
$12\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 - 2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 -$
$12\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2v_1^2 + 2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7c_s^2\omega_5\omega_9^2\omega_{12}^2\omega_6 - 6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6v_1^2 + 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6v_1^2 +$
$4\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6 + 2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 3\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - 4\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6v_1^2 -$
$4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6v_1^2 - 12\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2v_1^2 + 24\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6v_1^2 -$
$4\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 +$
$3\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 6\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - 2\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}c_s^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$
$12\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6v_1^2 + 3\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 +$
$12\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6v_1^2 + 12\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2v_1^2 - 12\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6v_1^2 + 4\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 -$
$4\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - 3\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 +$
$12\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 + 6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6v_1^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6v_1^2 - 12\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6v_1^2 -$
$4\omega_{13}c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6 -$
$4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 9\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 12\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6v_1^2 - 4\omega_{13}\omega_7c_s^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$
$8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 + 12\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6v_1^2 - 4\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 + 8\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 +$
$12\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2v_1^2 - 4\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2\omega_6 +$
$4\omega_{13}\omega_7c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 - 8\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6 - 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6v_1^2 + 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6 -$
$2\omega_{13}\omega_7c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 6\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 + 4\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6v_1^2 -$
$6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6v_1^2 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6$

$C_{30} = -4\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - \omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_1^2 + 13\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - \omega_7^2\omega_8^2\omega_5^3\omega_{12}^2 - 2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2v_1^2 + 2\omega_7\omega_8\omega_5^3\omega_{12}^2v_1^2 - 7\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 -$
$2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{12}^2 - 2\omega_7^2\omega_{14}\omega_8^2\omega_5^2v_1^2 - \omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2v_1^2 + 2\omega_7^2c_s^2\omega_{14}\omega_5^2\omega_{12}^2 - 2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2 - 2\omega_7^2\omega_8\omega_5^3\omega_{12}^2v_1^2 - 11\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 -$
$2\omega_7^2\omega_8^2\omega_5^2\omega_{12} + \omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2v_1^2 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + \omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3 - \omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{12} + \omega_7^2\omega_{14}\omega_8^2\omega_5^3v_1^2 - \omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 2\omega_7^2c_s^2\omega_{14}\omega_5^3\omega_{12}^2 +$
$4\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + \omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{12}^2 - 2\omega_7\omega_8\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2v_1^2 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2 - \omega_7^2\omega_8^2\omega_5^3\omega_{12}v_1^2 +$

$$\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_1^2 - 6\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 + 2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{12} - \omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 8\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 +$$
$$\omega_7^2\omega_8^2\omega_5^3\omega_{12} - 2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12} + 2\omega_7c_s^2\omega_{14}\omega_5^3\omega_{12}^2 + 5\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8^2\omega_5^3 + \omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2v_1^2 - \omega_7c_s^2\omega_8^2\omega_5^3\omega_{12}^2 -$$
$$2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}v_1^2 - 2\omega_7^2c_s^2\omega_8\omega_5^3\omega_{12}^2 + 7\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - \omega_7\omega_8^2\omega_5^3\omega_{12}^2v_1^2 - 2\omega_7^2\omega_8\omega_5^2\omega_{12}^2 + 4\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_7^2\omega_8\omega_5^2\omega_{12}^2v_1^2 -$$
$$\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2v_1^2 + \omega_7\omega_8^2\omega_5^3\omega_{12}^2 + \omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_7c_s^2\omega_8\omega_5^3\omega_{12}^2 + 4\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}v_1^2 + \omega_7^2\omega_8^2\omega_5^3\omega_{12}^2v_1^2 +$$
$$\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - \omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 6\omega_7^2c_s^2\omega_{14}\omega_8\omega_5\omega_{12}^2 + 2\omega_7^2\omega_8\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2v_1^2 + \omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}v_1^2 +$$
$$2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{12}^2 - 5\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} - \omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_8^2\omega_5^2\omega_{12}v_1^2 - 2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}$$

$$C_{31} = -12\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2v_1^2 - 24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2\omega_6^2 - 36\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 +$$
$$9\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2c_s^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2v_1^2 - 36\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 6\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 -$$
$$\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 12\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 - 18\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 -$$
$$24\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 54\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2v_1^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$$
$$12\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2v_1^2 + 12\omega_{13}\omega_7^2c_s^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 18\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2v_1^2 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6^2 +$$
$$6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2v_1^2 - 54\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +$$
$$12\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 6\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 6\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2v_1^2 - 24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6 -$$
$$3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2v_1^2 - 12\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 18\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 - 9\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 +$$
$$6\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6v_1^2 + 30\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 -$$
$$6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 + 3\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2\omega_6^2v_1^2 - 12\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 18\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 +$$
$$6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2\omega_6^2 + 24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 - 6\omega_{13}\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 +$$
$$12\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + 12\omega_{13}\omega_7c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 + 18\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2v_1^2 -$$
$$12\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 12\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6v_1^2 - 12\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 6\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 42\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$$
$$\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 9\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2v_1^2 +$$
$$54\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 - 36\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6^2 - 12\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2v_1^2 - 12\omega_{13}\omega_7^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 -$$
$$6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^2 - 9\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 -$$
$$12\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 +$$
$$12\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2\omega_6^2v_1^2 -$$
$$12\omega_{13}\omega_7^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 36\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2\omega_6^2 - 6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 18\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 - 42\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 -$$
$$6\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 54\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + 6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 +$$
$$24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 36\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2\omega_6^2 + 12\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 -$$
$$12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2v_1^2 + 6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6 + 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2v_1^2 +$$
$$12\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2v_1^2 + 24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6^2v_1^2 - 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 -$$
$$12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}\omega_7^2c_s^2\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6v_1^2 - 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^2v_1^2 + 3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2$$

$$C_{32} = \omega_7^2\omega_8\omega_5^3 + 2\omega_7\omega_8^2\omega_5^2 + \omega_7^2\omega_5^2 - \omega_7^2\omega_5^3 - 2\omega_7^2\omega_8\omega_5^2 - 2\omega_7^2\omega_8^2 + \omega_8\omega_5^3 + \omega_7^2\omega_8\omega_5 - \omega_7\omega_8^2\omega_5 + 3\omega_7^2\omega_8^2\omega_5 - \omega_7^2\omega_8^2\omega_5^2 + \omega_7\omega_5^3 - 2\omega_7\omega_8\omega_5^3 - \omega_8^2\omega_5^2$$

$$C_{33} = -4\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - \omega_7^2\omega_8^2\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_5^3\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8^2\omega_{12}^2 + \omega_{14}\omega_8\omega_5^3\omega_{12}^2 - 2\omega_7^2\omega_8^2\omega_5^2\omega_{12} + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} +$$
$$2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 2\omega_7\omega_8\omega_5^3\omega_{12}^2 + \omega_7^2\omega_{14}\omega_5^2\omega_{12}^2 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 3\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12}^2 + 2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2 - \omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$$
$$\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7^2\omega_8^2\omega_5^3\omega_{12} - \omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - 2\omega_7^2\omega_8\omega_5^2\omega_{12}^2 + \omega_7\omega_{14}\omega_5^3\omega_{12}^2 + 5\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 + \omega_7\omega_8^2\omega_5^3\omega_{12}^2 -$$
$$3\omega_7\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - \omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 2\omega_7^2\omega_8\omega_5^3\omega_{12}^2 - 2\omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} + \omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2$$

$$C_{34} = -4\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16} + 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{10}^2\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 4\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} +$$
$$4\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16} + 5\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 8\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} -$$
$$4\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 8\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16} - 10\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16} + 4\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} +$$
$$4\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16} + 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 5\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16} + 4\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16} -$$
$$8\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_{16} - 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{16} - 4\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16} - 4\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} +$$
$$4\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16} - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_{16} + 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7^2\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 8\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16} +$$
$$8\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16} + 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_{16} + 2\omega_{10}^2\omega_7\omega_{17}\omega_5^3\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{16} -$$
$$4\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{10}^2\omega_7\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} +$$
$$4\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16} + 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{16} - 4\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 4\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16} -$$
$$2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_{16} - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16} + 8\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} +$$
$$4\omega_{10}^2\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 8\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}$$

$$C_{35} = 12\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 - 12\omega_{10}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_1^2\omega_{16} +$$
$$6\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16} + 24\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12}\omega_6^2\omega_{16} + 10\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16} -$$
$$12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 12\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16} + 18\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16} + 6\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16} -$$
$$12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2 - 12\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16} +$$
$$12\omega_{10}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16} + 24\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16} - 24\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16} +$$
$$12\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2 + 12\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16} - 12\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}v_2^2\omega_{16} + 24\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16} +$$
$$12\omega_{10}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16} - 2\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2\omega_{16} +$$
$$12\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16} - 12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6v_2^2\omega_{16} + 36\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16} +$$
$$12\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6\omega_{16} - 12\omega_{10}\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16} - 48\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16} + 12\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2 -$$
$$12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}v_2^2\omega_{16} - 36\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16} - 18\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2\omega_{16} -$$
$$12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16} - 12\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2v_2^2\omega_{16} - 6\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16} +$$
$$12\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16} + 12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2\omega_{16} - 12\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2 - 24\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16} +$$
$$12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 + 12\omega_{10}\omega_7^3\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16} + 24\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16} -$$
$$24\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16} - 12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16} + 12\omega_{10}\omega_7^3c_s^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16} + 6\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{16} +$$

$12\omega_{10}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2+12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2\omega_{16}+12\omega_{10}\omega_7^3\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}+12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12}\omega_6^2\omega_{16}-$
$12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}-18\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}-12\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_1^2\omega_{16}+12\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16}-$
$24\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}+30\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16}-12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}-$
$24\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_{15}\omega_{12}\omega_6^2\omega_{16}-18\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16}+12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}-$
$12\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16}-24\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}+12\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6^2v_2^2\omega_{16}+$
$6\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}+12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}v_2^2\omega_{16}+24\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16}+$
$6\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_1^2\omega_{16}+12\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}-12\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}-$
$24\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16}+12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}-12\omega_{10}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{16}-$
$6\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}-12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2-12\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6^2\omega_{16}-12\omega_{10}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2+$
$12\omega_{10}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}+12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6\omega_{16}-6\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}-12\omega_{10}\omega_7^3c_s^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2\omega_{16}-$
$12\omega_{10}\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}+12\omega_{10}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6^2\omega_{16}-6\omega_{10}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}-12\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}+$
$12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}-18\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}+12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16}-$
$12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6\omega_{16}+12\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6^2v_2^2\omega_{16}-12\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}+12\omega_{10}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2\omega_{16}-$
$6\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_1^2\omega_{16}+12\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}+12\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16}-$
$12\omega_{10}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}+24\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16}-12\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16}+$
$12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12}\omega_6\omega_{16}+12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6v_2^2\omega_{16}-24\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16}-12\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}-$
$12\omega_{10}\omega_7^3\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16}-12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6+12\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}-\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}+$
$12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}+12\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16}-48\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_{16}+$
$12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{16}-6\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{16}-12\omega_{10}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2v_2^2+$
$36\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6v_2^2\omega_{16}+24\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{16}$

$C_{36}=-\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}v_2^2\omega_{16}^2-2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2-\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2+\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2-9\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2+$
$\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2+2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}^2+\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2+\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2-2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2+$
$3\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}\omega_{16}^2+\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{16}^2-2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}-\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}^2-3\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_{16}^2-$
$3\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}-2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}+6\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2+2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}-3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}-$
$3\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{16}^2+2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}-\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2v_2^2\omega_{16}^2+2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2-3\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}+$
$3\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_{16}^2+\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}^2+\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_{16}^2+\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}-\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15}v_2^2\omega_{16}^2+$
$\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2-3\omega_{10}^3\omega_7^2c_s^2\omega_5^2\omega_{15}^2\omega_{16}^2-6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2-6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2-\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2-$
$\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{16}^2-3\omega_{10}^3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}+\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2\omega_{16}^2+3\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2+3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{16}^2-$
$\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2-\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2-3\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5\omega_{15}^2\omega_{16}^2-\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2-\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2+$
$\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2\omega_{16}^2-3\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}+3\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}^2\omega_{16}^2+6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2-\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}+$
$\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2-\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{16}^2+\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2\omega_{16}^2-3\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}\omega_{16}^2+3\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2+6\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2+$
$\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}+\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2-\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2-\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2+3\omega_{10}^3\omega_7c_s^2\omega_5^2\omega_{15}^2\omega_{16}^2+\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2+$
$\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}-\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2+\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2+3\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2-2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2+$
$3\omega_{10}^3\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}-\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}+3\omega_{10}^3\omega_7^2c_s^2\omega_5\omega_{15}^2\omega_{16}^2+2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2+6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2+$
$\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{16}^2-\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}\omega_{16}^2+3\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}\omega_{16}^2-\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2-3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_{16}^2+$
$3\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2+\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2+\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2-3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2+3\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2+$
$2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2-3\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2+\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2-\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2\omega_{16}^2+\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_{16}^2-$
$\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}-\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2+\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2+\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2v_2\omega_{16}+\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}-$
$\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2\omega_{16}^2-3\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2-\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}-\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2-\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2-$
$\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}+\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2-3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{16}^2-3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{16}^2-3\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2-$
$2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2+3\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5\omega_{15}\omega_{16}^2-\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2+2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}v_2^2\omega_{16}^2+\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2v_2^2\omega_{16}^2-$
$\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2-\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}-\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2\omega_{16}^2+\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}-2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}^2+\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2-$
$\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2+\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2+\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{16}^2+3\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2+\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_{16}^2-$
$3\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2+3\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2-\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2-\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_{16}+3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}+$
$\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}+\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}-3\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}+6\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}-\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}+$
$2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2+\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2v_2^2\omega_{16}^2-\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{16}^2-3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}\omega_{16}^2+\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}v_2^2\omega_{16}^2+$
$\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2-2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-5\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2+2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_{16}^2+$
$2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2-13\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-$
$2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7c_s^2\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6v_2^2\omega_{16}^2-$
$2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2-8\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2+2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_6v_2^2\omega_{16}^2-$
$4\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7\omega_8\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2+$
$2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}-2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2+8\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2-\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2+$
$2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}-2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16}^2-\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2+3\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}+$
$2\omega_{10}^3\omega_7^2\omega_{8}\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2-2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}+2\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}\omega_6v_2^2\omega_{16}-2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2-2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6v_2^2\omega_{16}^2+$
$4\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2-9\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}+2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2+\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2+$
$\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16}^2-2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2-2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6+2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2-$

$4\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 6\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 6\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$
$4\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - \omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2 + 6\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6v_2^2\omega_{16}^2 -$
$\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 3\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16} + 2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2 + 15\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2 +$
$4\omega_{10}^3c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2 - 2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^2\omega_8\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2 - 2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 +$
$11\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 4\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 6\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 -$
$2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} + 9\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6v_2^2\omega_{16}^2 +$
$12\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} - \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 - 3\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2 + 2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16}^2 +$
$2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16} - 6\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2 +$
$8\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6v_2^2\omega_{16}^2 + 2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2 - 2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 +$
$2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2 + 6\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16}^2 + 3\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 - 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2 - 6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$
$2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2 + 2\omega_{10}^3\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6v_2^2\omega_{16}^2 - 2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2 +$
$2\omega_{10}^3\omega_7^2\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6v_2^2\omega_{16}^2 + 9\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 +$
$2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 + 2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_{16}^2 - 6\omega_{10}^3c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} -$
$\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16} + \omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 + 3\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 +$
$2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2 - 11\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 -$
$2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{16}^2 - 4\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} +$
$4\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 4\omega_{10}^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 -$
$15\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_6v_2^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_{16}^2 +$
$2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6v_2^2\omega_{16}^2 + 2\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 5\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2 +$
$\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6\omega_{16} - 4\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6\omega_{16}^2 + 4\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}$

$C_{38} = -3\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}v_2^2\omega_{16}^2 - 2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 - 3\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2 + \omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 - 3\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 +$
$3\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}^2 + 3\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2 + 3\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2 - 2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 +$
$\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}\omega_{16}^2 + 3\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{16}^2 - 2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 3\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}^2 - \omega_{10}^2\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_{16}^2 -$
$\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16} - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} + 2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 + 6\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} - \omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} -$
$\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} - 3\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2v_2^2\omega_{16}^2 + 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 - \omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16} +$
$\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_{16}^2 + 3\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 3\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15}v_2^2\omega_{16}^2 +$
$3\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 - \omega_{10}^3\omega_7^2c_s^2\omega_5^2\omega_{15}^2\omega_{16}^2 - 2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 - 2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2 - 3\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2 -$
$3\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{16}^2 - \omega_{10}^3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} + \omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2\omega_{16}^2 + \omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 + \omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{16}^2 -$
$3\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2 - \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 - \omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5\omega_{15}^2\omega_{16}^2 - \omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2 - 3\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 +$
$\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2\omega_{16}^2 - \omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} + \omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 - \omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_{16} +$
$3\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 - \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2\omega_{16}^2 - \omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}\omega_{16}^2 + \omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 + 2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 +$
$\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} + \omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 - 3\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2 - 3\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2 + \omega_{10}^3\omega_7c_s^2\omega_5^2\omega_{15}^2\omega_{16}^2 +$
$\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 + 3\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16} - 3\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2 + \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 -$
$6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 + \omega_{10}^3\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 3\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} + \omega_{10}^3\omega_7^2c_s^2\omega_5\omega_{15}^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2 +$
$2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{16}^2 - \omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}\omega_{16}^2 + \omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16} - \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16} - \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2\omega_{16}^2 -$
$\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15}^2\omega_{16}^2 + 3\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 + \omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 + 3\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}v_2^2\omega_{16}^2 - \omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2 - \omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 - \omega_{10}^3\omega_7^2\omega_5\omega_{15}^2\omega_{16}^2 + \omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_{16}^2 -$
$3\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16} - \omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 + 3\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 + 3\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} + 3\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} -$
$\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2\omega_{16}^2 - \omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 - 3\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} - \omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 - \omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 -$
$3\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16} + 3\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 - \omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 - \omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{16}^2 - \omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 -$
$2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 + \omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5\omega_{15}\omega_{16}^2 - 3\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 + 6\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}v_2^2\omega_{16}^2 + 3\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2v_2^2\omega_{16}^2 -$
$\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} - \omega_{10}^3\omega_7\omega_5^2\omega_{15}^2\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2v_2^2\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 -$
$3\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 + \omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 + \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{16}^2 + \omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_{16}^2 -$
$9\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 + \omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 - 3\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 - \omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_{16} + \omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16} +$
$\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} + \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16} - \omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16} + 2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} - 3\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16} +$
$6\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2v_2^2\omega_{16}^2 + 3\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2v_2^2\omega_{16}^2 - 3\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{16}^2 - \omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}\omega_{16}^2 + 3\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}v_2^2\omega_{16}^2 +$
$\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16} - \omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 - \omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_{16}^2 - \omega_{10}^3\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2 +$
$2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16} - \omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 - \omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 + \omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2$

$C_{39} = -2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - \omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_{16}^2 +$
$2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_{15}\omega_6\omega_{16}^2 - \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2 - 3\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 + \omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2 +$
$4\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + \omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_{16}^2 + 2\omega_{10}^3\omega_7^3\omega_8\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16}^2 -$
$6\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{16}^2 - 4\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16}^2 + 3\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 -$
$4\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6\omega_{16}^2 - 8\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 + 4\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} + 2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2 -$
$6\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_6\omega_{16}^2 - 2\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16} +$
$12\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 5\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2 - 13\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - \omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2 -$
$2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} + 2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16} - 2\omega_{10}^3\omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} -$
$2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 - 4\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2 - 3\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16}^2 +$
$2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_5\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_6v_2^2\omega_{16}^2 - 8\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^3\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 -$
$2\omega_{10}^2\omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} + 2\omega_{10}^3\omega_7^3c_s^2\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16} - 2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16} -$
$4\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^2\omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 4\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16}^2 - 2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16} + 4\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2 -$
$\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 + 2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2 - 15\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 - 2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16} -$
$2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2 + 2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2 + 2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16}^2 + 2\omega_{10}^3\omega_7^3\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2 -$

$$2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{16}^2+4\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}-2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16}^2+\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-11\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16}^2-$$
$$2\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6+4\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2+2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6+2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}-$$
$$2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2+4\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}-\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^3c_s^2\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2+$$
$$3\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2+11\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2-2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}+$$
$$2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2-2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2+15\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-4\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-$$
$$2\omega_{10}^3\omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}+4\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2+2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}+3\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2+$$
$$9\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16}^2-\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}-2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}+2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}+$$
$$2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-6\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_6v_2^2\omega_{16}^2+8\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-$$
$$2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_{15}^2\omega_6\omega_{16}^2+6\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6\omega_{16}^2+2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2+2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16}^2+$$
$$2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6+9\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}+2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6-3\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2+$$
$$2\omega_{10}^3\omega_7^3c_s^2\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16}^2-6\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_{15}\omega_6\omega_{16}^2-4\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}+2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2+$$
$$6\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}-2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2+2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_{16}^2+$$
$$\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2+6\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^3c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2+$$
$$6\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{16}^2+4\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}+\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2-4\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-$$
$$4\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-8\omega_{10}^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6+2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2+$$
$$3\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2-\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16}^2+2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2-2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_6v_2^2\omega_{16}^2-$$
$$9\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_{15}\omega_6v_2^2\omega_{16}^2+5\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2+4\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2-$$
$$2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6\omega_{16}+2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2-3\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16}^2+2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6v_2^2\omega_{16}+$$
$$2\omega_{10}^2\omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2+8\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2+2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}+\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6v_2^2\omega_{16}^2-2\omega_{10}^3\omega_7^3\omega_8\omega_5\omega_{15}^2\omega_6\omega_{16}^2+$$
$$\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\omega_{16}^2-2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\omega_{16}+2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_{16}^2+2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}$$

$$C_{40}=-4\omega_{10}^3c_s^4\omega_{16}-32\omega_{10}^2\omega_7^2v_2^2\omega_{16}+20\omega_{10}^3\omega_7v_2^4\omega_{16}+4\omega_{10}^3\omega_7^2c_s^2\omega_{16}-8\omega_{10}^2v_2^2\omega_{16}^2+4\omega_{10}^3\omega_7c_s^2-4\omega_{10}^2\omega_7^2c_s^2\omega_{16}^2-20\omega_{10}^2\omega_7v_2^4\omega_{16}^2-$$
$$20\omega_{10}\omega_7v_2^2\omega_{16}^2-12\omega_{10}\omega_7^2c_s^4\omega_{16}^2-48\omega_{10}^2\omega_7c_s^2v_2^2\omega_{16}-36\omega_{10}^3c_s^2v_2^2\omega_{16}+8\omega_7^2c_s^4\omega_{16}^2-24\omega_{10}^2\omega_7^2c_s^2v_2^2+36\omega_{10}^2c_s^2v_2^2\omega_{16}^2-4\omega_{10}^2\omega_7^2v_2^4+4\omega_{10}^3\omega_7^2c_s^4-$$
$$20\omega_{10}\omega_7^2v_2^4\omega_{16}-36\omega_{10}\omega_7^2v_2^4\omega_{16}^2-4\omega_{10}\omega_7^2c_s^2\omega_{16}^2-4\omega_{10}\omega_7^2c_s^4\omega_{16}-84\omega_{10}^2\omega_7c_s^2v_2^2\omega_{16}^2+24\omega_{10}^3\omega_7^2c_s^2v_2^2+24\omega_7^2v_2^4\omega_{16}^2+4\omega_{10}^2\omega_7^2c_s^2-4\omega_{10}^3\omega_7^2v_2^2-$$
$$4\omega_{10}^2c_s^2\omega_{16}^2-51\omega_{10}^3\omega_7^2c_s^2v_2^2\omega_{16}+72\omega_{10}\omega_7c_s^2v_2^2\omega_{16}^2-4\omega_{10}^3\omega_7v_2^4+13\omega_{10}^3\omega_7^2v_2^2\omega_{16}+8\omega_{10}^3\omega_7c_s^4\omega_{16}-8\omega_{10}^2\omega_7^2c_s^2\omega_{16}-16\omega_{10}^2\omega_7v_2^4\omega_{16}-$$
$$8\omega_{10}^3v_2^4\omega_{16}-8\omega_{10}^2\omega_7c_s^4\omega_{16}^2-13\omega_{10}^2\omega_7^2v_2^2\omega_{16}^2+12\omega_{10}\omega_7^2c_s^2\omega_{16}^2+20\omega_{10}\omega_7v_2^4\omega_{16}^2-72\omega_{10}\omega_7^2c_s^2v_2^2\omega_{16}+4\omega_{10}^3\omega_7^2v_2^4-4\omega_{10}^2\omega_7^2c_s^4-8\omega_7^2c_s^2\omega_{16}^2-$$
$$24\omega_{10}^3\omega_7c_s^2v_2^2+20\omega_{10}\omega_7^2v_2^2\omega_{16}+4\omega_{10}^3c_s^2\omega_{16}-4\omega_{10}^3\omega_7^2c_s^4\omega_{16}-20\omega_{10}^3\omega_7v_2^2\omega_{16}+32\omega_{10}^2\omega_7^2v_2^4\omega_{16}+8\omega_{10}^2v_2^4\omega_{16}^2+4\omega_{10}^3\omega_7v_2^2+20\omega_{10}^2\omega_7v_2^2\omega_{16}^2+$$
$$4\omega_{10}^2\omega_7^2c_s^4\omega_{16}^2+120\omega_{10}^2\omega_7^2c_s^2v_2^2\omega_{16}+4\omega_{10}^2c_s^4\omega_{16}^2+16\omega_{10}^2\omega_7v_2^2\omega_{16}+8\omega_{10}^2\omega_7^2c_s^4\omega_{16}-8\omega_{10}^3\omega_7c_s^2\omega_{16}-13\omega_{10}^3\omega_7^2v_2^4\omega_{16}+51\omega_{10}^2\omega_7^2c_s^2v_2^2\omega_{16}^2+$$
$$8\omega_{10}^3v_2^2\omega_{16}+13\omega_{10}^2\omega_7^2v_2^4\omega_{16}^2+8\omega_{10}^2\omega_7c_s^2\omega_{16}^2+96\omega_7^2c_s^2v_2^2\omega_{16}^2-4\omega_{10}^3\omega_7c_s^4-4\omega_{10}^3\omega_7^2c_s^2+4\omega_{10}^2\omega_7^2v_2^2+4\omega_{10}\omega_7c_s^4\omega_{16}^2+36\omega_{10}\omega_7^2v_2^2\omega_{16}^2+$$
$$4\omega_{10}\omega_7^2c_s^2\omega_{16}+84\omega_{10}^3\omega_7c_s^2v_2^2\omega_{16}-24\omega_7^2v_2^2\omega_{16}^2-144\omega_{10}\omega_7^2c_s^2v_2^2\omega_{16}^2$$

$$C_{41}=17\omega_{10}^3\omega_7^2\omega_{16}-32\omega_7^2\omega_{16}^2+104\omega_{10}^2\omega_7^2v_2^2\omega_{16}-25\omega_{10}^3\omega_7^2c_s^2\omega_{16}+48\omega_{10}\omega_7^2\omega_{16}^2+28\omega_{10}^2v_2^2\omega_{16}^2-16\omega_{10}^3\omega_7c_s^2+25\omega_{10}^2\omega_7^2c_s^2\omega_{16}^2+$$
$$64\omega_{10}\omega_7v_2^2\omega_{16}^2+28\omega_{10}^2\omega_7\omega_{16}^2+32\omega_{10}\omega_7c_s^2\omega_{16}^2+16\omega_{10}^2\omega_7\omega_{16}+12\omega_{10}^3\omega_{16}-16\omega_{10}^2\omega_7^2c_s^2+16\omega_{10}^3\omega_7^2v_2^2+20\omega_{10}^2c_s^2\omega_{16}^2-43\omega_{10}^3\omega_7^2v_2^2\omega_{16}+$$
$$56\omega_{10}^2\omega_7^2c_s^2\omega_{16}+43\omega_{10}^2\omega_7^2v_2^2\omega_{16}^2+24\omega_{10}\omega_7^2\omega_{16}-12\omega_{10}^2\omega_{16}^2-72\omega_{10}\omega_7^2c_s^2\omega_{16}^2+48\omega_7^2c_s^2\omega_{16}^2+8\omega_{10}^3\omega_7-64\omega_{10}\omega_7^2v_2^2\omega_{16}-20\omega_{10}^3c_s^2\omega_{16}+$$
$$68\omega_{10}^3\omega_7v_2^2\omega_{16}-16\omega_{10}^2\omega_7c_s^2\omega_{16}+8\omega_{10}^2\omega_7^2-40\omega_{10}^2\omega_7^2\omega_{16}-16\omega_{10}^3\omega_7v_2^2-68\omega_{10}^2\omega_7v_2^2\omega_{16}^2-17\omega_{10}^2\omega_7^2\omega_{16}^2-48\omega_{10}^2\omega_7v_2^2\omega_{16}+44\omega_{10}^3\omega_7c_s^2\omega_{16}-$$
$$28\omega_{10}^3v_2^2\omega_{16}-44\omega_{10}^2\omega_7c_s^2\omega_{16}^2-28\omega_{10}^3\omega_7\omega_{16}+16\omega_{10}^3\omega_7^2c_s^2-16\omega_{10}^2\omega_7^2v_2^2-8\omega_{10}^3\omega_7^2-24\omega_{10}\omega_7\omega_{16}^2-120\omega_{10}\omega_7^2v_2^2\omega_{16}^2-32\omega_{10}\omega_7^2c_s^2\omega_{16}+80\omega_7^2v_2^2\omega_{16}^2$$

$$C_{42}=-12\omega_{10}^3\omega_7^3v_2^2+24\omega_{10}^2\omega_7^2v_2^2\omega_{16}-24\omega_{10}^3\omega_7v_2^4\omega_{16}+18\omega_{10}^3\omega_7^2c_s^2\omega_{16}-21\omega_{10}^3\omega_7^3c_s^2v_2^2\omega_{16}+\omega_{10}^2\omega_7^3c_s^4\omega_{16}^2+4\omega_{10}^3\omega_7^3v_2^4\omega_{16}^2+60\omega_{10}^2\omega_7^3v_2^4\omega_{16}+$$
$$6\omega_{10}^3\omega_7^3c_s^4\omega_{16}-81\omega_{10}^3\omega_7^2c_s^2v_2^2\omega_{16}^2-6\omega_{10}^2\omega_7^2c_s^2\omega_{16}^2+18\omega_{10}^3\omega_7^2v_2^2\omega_{16}^2-24\omega_{10}^3\omega_7c_s^4\omega_{16}^2-12\omega_{10}\omega_7^2c_s^4\omega_{16}^2-12\omega_7^3c_s^2\omega_{16}^2+36\omega_{10}\omega_7^3v_2^2\omega_{16}+$$
$$12\omega_{10}\omega_7^3c_s^2\omega_{16}^2-72\omega_7^3v_2^2\omega_{16}^2-48\omega_{10}^2\omega_7c_s^2v_2^2\omega_{16}^2+90\omega_{10}\omega_7^3v_2^2\omega_{16}^2-12\omega_{10}^3\omega_7^2c_s^2v_2^2-48\omega_{10}^3c_s^2v_2^2\omega_{16}^2+12\omega_{10}^3\omega_7^2v_2^2-\omega_{10}^3\omega_7^3c_s^4\omega_{16}^2+$$
$$19\omega_{10}^2\omega_7^3v_2^4\omega_{16}^2-12\omega_{10}^2\omega_7^3v_2^4+30\omega_{10}^3\omega_7^2c_s^2v_2^2\omega_{16}-48\omega_{10}^3\omega_7^2v_2^2\omega_{16}+12\omega_{10}^3\omega_7c_s^4\omega_{16}-12\omega_{10}^2\omega_7^2c_s^2\omega_{16}+12\omega_{10}^3c_s^4\omega_{16}^2+12\omega_{10}^3\omega_7v_2^4\omega_{16}^2-$$
$$5\omega_{10}^3\omega_7^2c_s^2\omega_{16}^2-12\omega_{10}^2\omega_7^2v_2^2\omega_{16}^2+12\omega_{10}^3\omega_7^3c_s^2v_2^2\omega_{16}^2-27\omega_{10}^3\omega_7^3v_2^4\omega_{16}-6\omega_{10}^2\omega_7^3c_s^4\omega_{16}+12\omega_{10}\omega_7^2c_s^2\omega_{16}^2-12\omega_{10}^2\omega_7^3c_s^2v_2^2+12\omega_7^3c_s^4\omega_{16}^2-$$
$$36\omega_{10}\omega_7^3v_2^4\omega_{16}-12\omega_{10}^3\omega_7^2v_2^4+102\omega_{10}^3\omega_7c_s^2v_2^2\omega_{16}^2-306\omega_{10}\omega_7^3c_s^2v_2^2\omega_{16}^2-12\omega_{10}\omega_7^3c_s^4\omega_{16}^2+60\omega_{10}^2\omega_7^3c_s^2v_2^2\omega_{16}^2-18\omega_{10}^3\omega_7^2c_s^4\omega_{16}+$$
$$24\omega_{10}^3\omega_7v_2^2\omega_{16}-24\omega_{10}^2\omega_7^2v_2^4\omega_{16}-4\omega_{10}^3\omega_7^3v_2^2\omega_{16}^2-\omega_{10}^2\omega_7^3c_s^2\omega_{16}^2-6\omega_{10}^3\omega_7^3c_s^2\omega_{16}+12\omega_{10}^2\omega_7^3v_2^2-60\omega_{10}^2\omega_7^3v_2^2\omega_{16}+252\omega_7^3c_s^2v_2^2\omega_{16}^2+$$
$$6\omega_{10}^3\omega_7c_s^2\omega_{16}^2-18\omega_{10}^3\omega_7^2v_2^4\omega_{16}^2+6\omega_{10}^2\omega_7^2c_s^4\omega_{16}^2-12\omega_{10}^2\omega_7^2c_s^2v_2^2\omega_{16}-19\omega_{10}^2\omega_7^3v_2^2\omega_{16}^2+12\omega_{10}^2\omega_7^2c_s^4\omega_{16}-12\omega_{10}^3\omega_7c_s^2\omega_{16}+48\omega_{10}^3\omega_7^2v_2^4\omega_{16}+$$
$$162\omega_{10}^2\omega_7^2c_s^2v_2^2\omega_{16}^2+54\omega_{10}^2\omega_7^3c_s^2v_2^2\omega_{16}+12\omega_{10}^2\omega_7^2v_2^4\omega_{16}^2+12\omega_{10}^3\omega_7^3v_2^4+13\omega_{10}^3\omega_7^2c_s^4\omega_{16}^2-12\omega_{10}^3\omega_7v_2^2\omega_{16}^2+6\omega_{10}^2\omega_7^3c_s^2\omega_{16}+27\omega_{10}^3\omega_7^3v_2^2\omega_{16}-$$
$$36\omega_{10}\omega_7^3c_s^2v_2^2\omega_{16}+72\omega_7^3v_2^4\omega_{16}^2+12\omega_{10}^3\omega_7^3c_s^2v_2^2-90\omega_{10}\omega_7^3v_2^4\omega_{16}^2-12\omega_{10}^3\omega_7c_s^2v_2^2\omega_{16}-108\omega_{10}\omega_7^2c_s^2v_2^2\omega_{16}^2$$

$$C_{43}=12\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19}v_1+24\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_5\omega_{12}\omega_6^2\omega_{19}v_2-6\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2v_2v_1^2+6\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2+$$
$$6\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19}v_2^2v_1-12\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2v_1^2-3\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2v_2^2v_1+6\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2+$$
$$24\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2-12\omega_7v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_1-12\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_6^2\omega_{19}v_2^2v_1-3\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2^2v_1-$$
$$12\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19}v_2v_1^2-24\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_2+6\omega_7v_3^2\omega_{20}\omega_8^2\omega_{12}\omega_6^2\omega_{19}v_2^2v_1-12\omega_7^2v_3^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19}v_2^2v_1+$$
$$6\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2v_1^2-12\omega_7^2v_3^2c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19}v_1-6\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2-3\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2^2v_1+$$
$$12\omega_7c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2^2v_1-3\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2v_1^2-12\omega_7^2v_3^2c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19}v_2+24\omega_7c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2+$$
$$12\omega_7v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_1-6\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2v_2v_1^2+6\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_{12}\omega_6^2\omega_{19}v_2v_1^2+12\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19}v_2^2v_1+$$
$$24\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_2-12\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19}v_2^2v_1+3\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2v_2-12\omega_7v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_8^2\omega_{19}v_2+$$
$$12\omega_7^2v_3^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_1+12\omega_7^2v_3^2c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19}v_2+6\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_1+12\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2v_2v_1^2+$$
$$6\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2v_1^2-12\omega_7v_3^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2^2v_1+12\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19}v_2^2v_1+3\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2^2v_1+$$
$$12\omega_7v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2-24\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2-6\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_1-12\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19}v_2-$$
$$48\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19}v_2-6\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_1+12\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2^2v_1-12\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2v_1^2+$$
$$6\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{19}v_2^2v_1+6\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2^2v_1+6\omega_7v_3^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2v_1+$$
$$12\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2^2v_1-6\omega_7^2v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2v_2-6\omega_7^2v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_1+12\omega_7v_3^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2+$$
$$3\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2v_2v_1^2-6\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2v_1^2-6\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2v_1^2-12\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2^2v_1+$$
$$3\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2v_1^2+24c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2-6\omega_7^2v_3^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19}v_2-6\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19}v_2v_1^2+$$

$$12\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 - 6\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 - 12\omega_{7}v_3^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_1 - 6\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{6}^2\omega_{19}v_2 +$$
$$12\omega_{7}v_3^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 - 12\omega_{7}c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2^2v_1 + 6\omega_{7}v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2^2v_1 + 12\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_1 -$$
$$6\omega_{7}v_3^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2 - 48\omega_{7}c_s^4\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2 - 6\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 - 24\omega_{7}^2c_s^4\omega_{20}\omega_{14}\omega_{8}^2\omega_{12}\omega_{6}\omega_{19}v_2 +$$
$$12\omega_{7}^2c_s^2\omega_{14}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 12\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2 + 12\omega_{7}v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_1 - 12\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_1 -$$
$$6\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 - 12\omega_{7}v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2 - 12\omega_{7}v_3^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 12\omega_{7}c_s^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 +$$
$$12\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 12\omega_{7}^2v_3^2\omega_{20}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 12\omega_{7}v_3^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2 + 6\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{6}^2\omega_{19}v_1 +$$
$$6\omega_{7}v_3^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_1 - 12\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2 + 2\omega_{7}^2c_s^4\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2 + 6\omega_{7}^2v_3^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_1 -$$
$$12\omega_{7}v_3^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 - 6\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{6}^2\omega_{19}v_2v_1^2 + 12\omega_{7}^2v_3^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 + 12\omega_{7}^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{6}^2\omega_{19}v_2v_1^2 -$$
$$12\omega_{7}^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 6\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 6\omega_{7}^2v_3^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_1 - 6\omega_{7}v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2 +$$
$$6\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2^2v_1 - 12\omega_{7}v_3^2c_s^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_1 + 6\omega_{7}^2v_3^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2 - 6\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 +$$
$$6\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2 + 12\omega_{7}^2v_3^2\omega_{14}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 3\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_1 - 6\omega_{7}^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 +$$
$$3\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 + 12\omega_{7}c_s^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 12\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{6}^2\omega_{19}v_2 + 6\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2^2v_1 +$$
$$48\omega_{7}^2c_s^4\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}\omega_{19}v_2 - 6\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 6\omega_{7}^2v_3^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2^2v_1 + 12\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{6}^2\omega_{19}v_2v_1^2 -$$
$$6\omega_{7}v_3^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 3\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{6}^2\omega_{19}v_2v_1^2 + 12\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 + 12\omega_{7}^2v_3^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 +$$
$$3\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2v_1^2 - 3\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 - 28\omega_{7}^2c_s^4\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}\omega_{19}v_2 - 12\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 +$$
$$6\omega_{7}v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 24\omega_{7}^2c_s^4\omega_{20}\omega_{14}\omega_{8}\omega_{12}\omega_{6}^2\omega_{19}v_2 + 12\omega_{7}^2c_s^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 - 6\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{6}^2\omega_{19}v_2v_1^2 -$$
$$6\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{6}^2\omega_{19}v_2v_1^2 - 12\omega_{7}c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 12\omega_{7}^2c_s^2\omega_{20}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 - 12\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{6}^2\omega_{19}v_1 -$$
$$3\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2 - 12\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 12\omega_{7}v_3^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 -$$
$$6\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_1 - 24\omega_{7}^2c_s^4\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{19}v_2 - 6\omega_{7}^2v_3^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 - 12\omega_{7}v_3^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2^2v_1 +$$
$$6\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 12\omega_{7}c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2v_1^2 - 12\omega_{7}v_3^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 + 6\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 -$$
$$6\omega_{7}v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2v_1^2 + 3\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{6}^2\omega_{19}v_2 - 12\omega_{7}^2c_s^2\omega_{14}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 + 6\omega_{7}^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{6}^2\omega_{19}v_2^2v_1 +$$
$$12\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 - 3\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{6}^2\omega_{19}v_2^2v_1 + 6\omega_{7}c_s^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 + 12\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2 -$$
$$12\omega_{7}^2c_s^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 - 3\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2^2v_1 - 12\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 + 6\omega_{7}^2v_3^2\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 +$$
$$12\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_1 + 6\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{6}^2\omega_{19}v_2^2v_1 - 24c_s^4\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}\omega_{19}v_2 - 12\omega_{7}^2v_3^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 -$$
$$12\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2 - 12\omega_{7}^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{6}^2\omega_{19}v_2^2v_1 + 12\omega_{7}v_3^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 - 6\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2v_2v_1^2 -$$
$$6\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 - 12\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_1 + 12\omega_{7}^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 - 12\omega_{7}c_s^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 -$$
$$3\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{6}^2\omega_{19}v_1 + 12\omega_{7}v_3^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 + 6\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2v_1^2 - 12\omega_{7}^2v_3^2\omega_{20}\omega_{8}\omega_{5}\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1 +$$
$$48\omega_{7}c_s^4\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}\omega_{19}v_2 - 12\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{12}\omega_{6}^2\omega_{19}v_2^2v_1$$

$$C_{44} = -4\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{14}\omega_{8}\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} + 4\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 + 4\omega_{13}\omega_{7}v_3^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 +$$
$$4\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} + 4\omega_{13}\omega_{7}v_3^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} + 4\omega_{13}\omega_{7}c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 +$$
$$2\omega_{13}\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2^2 + 8\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}\omega_{19}v_2v_1 - 4\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 +$$
$$4\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 - 4\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{8}\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 + 4\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} +$$
$$8\omega_{13}\omega_{7}v_3^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 - 2\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 + 2\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{6}^2\omega_{19} -$$
$$4\omega_{13}\omega_{7}v_3^2c_s^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} - 4\omega_{13}\omega_{7}v_3^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 - 4\omega_{13}\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2v_1 -$$
$$8\omega_{13}\omega_{7}^2c_s^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 + 2\omega_{13}\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2^2 - 4\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 -$$
$$\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{6}^2\omega_{19} - 4\omega_{13}\omega_{7}^2v_3^2\omega_{14}\omega_{8}\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 - 2\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} -$$
$$8\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 - 4\omega_{13}\omega_{7}c_s^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 - 8\omega_{13}\omega_{7}v_3^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 -$$
$$6\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}\omega_{19}v_2v_1 - 4\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{6}^2\omega_{19}v_2v_1 + 4\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{12}\omega_{6}\omega_{19}v_2v_1 +$$
$$4\omega_{13}\omega_{7}^2v_3^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 + 2\omega_{13}\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 - 8\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{9}\omega_{12}\omega_{6}\omega_{19}v_2v_1 -$$
$$4\omega_{13}\omega_{7}c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2^2 + 2\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2v_1 + 4\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} -$$
$$4\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} - 8\omega_{13}\omega_{7}c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 + 2\omega_{13}\omega_{7}v_3^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 -$$
$$4\omega_{13}\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2v_1 - 8\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{19}v_2v_1 - 4\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 +$$
$$12\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 + 4\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} - 4\omega_{13}\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 +$$
$$4\omega_{13}\omega_{7}^2v_3^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 + 8\omega_{13}\omega_{7}c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2v_1 + 8\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 +$$
$$8\omega_{13}\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}\omega_{19}v_2v_1 - 2\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} - 4\omega_{13}\omega_{7}v_3^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 +$$
$$2\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{6}^2\omega_{19}v_2^2 - 2\omega_{13}\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 + 2\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2 + 2\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{6}^2\omega_{19}v_2v_1 -$$
$$8\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{12}\omega_{6}\omega_{19}v_2v_1 - \omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2^2 + 8\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{19}v_2v_1 -$$
$$4\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{9}\omega_{6}^2\omega_{19}v_2^2 + 6\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 + \omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} -$$
$$16\omega_{13}\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 + 2\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} - 2\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 +$$
$$4\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 + 8\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 - \omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{6}^2\omega_{19}v_2^2 +$$
$$2\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{6}^2\omega_{19}v_2^2 + 4\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 + 8\omega_{13}\omega_{7}^2v_3^2\omega_{14}\omega_{8}\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 +$$
$$4\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}\omega_{9}\omega_{12}\omega_{6}\omega_{19}v_2v_1 - 4\omega_{13}\omega_{7}v_3^2c_s^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} - 2\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} -$$
$$4\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} - 8\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 - 2\omega_{13}\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 +$$
$$4\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 - 4\omega_{13}\omega_{7}v_3^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2 + \omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 + 2\omega_{13}\omega_{7}v_3^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} -$$
$$4\omega_{13}\omega_{7}^2v_3^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{9}\omega_{6}^2\omega_{19} - 8\omega_{13}\omega_{7}v_3^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 - 4\omega_{13}\omega_{7}v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2v_1 -$$
$$8\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 + 2\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{6}^2\omega_{19}v_2^2 + 4\omega_{13}\omega_{7}^2c_s^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 -$$
$$2\omega_{13}\omega_{7}^2v_3^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 + 2\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{6}^2\omega_{19}v_2^2 - 4\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{6}^2\omega_{19}v_2v_1 +$$
$$4\omega_{13}\omega_{7}v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19} - \omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2^2 + 2\omega_{13}\omega_{7}v_3^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2 +$$
$$2\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2v_1 + 8\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{8}^2\omega_{5}\omega_{9}\omega_{6}^2\omega_{19}v_2v_1 + 4\omega_{13}\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 -$$
$$8\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 - 4\omega_{13}\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}\omega_{19}v_2v_1 + 8\omega_{13}\omega_{7}v_3^2\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2v_2v_1 +$$
$$4\omega_{13}\omega_{7}^2c_s^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 - 2\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 - 4\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}\omega_{19}v_2v_1 -$$
$$8\omega_{13}\omega_{7}^2v_3^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 + 8\omega_{7}c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}\omega_{19}v_2v_1 - 2\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 +$$
$$8\omega_{13}\omega_{7}^2c_s^2\omega_{20}\omega_{14}\omega_{8}^2\omega_{5}\omega_{9}\omega_{6}\omega_{19}v_2v_1 + 4\omega_{13}\omega_{7}^2v_3^2\omega_{20}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2^2 + 8\omega_{13}\omega_{7}c_s^2\omega_{14}\omega_{8}\omega_{5}^2\omega_{9}\omega_{12}\omega_{6}^2\omega_{19}v_2v_1 +$$

$4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_6^2\omega_{19}v_2^2 - 4\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6\omega_{19}v_2v_1 -$
$4\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 + 8\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19}v_2v_1 + 4\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 -$
$\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19}v_2^2 + 4\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 +$
$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_6^2\omega_{19} + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 + 8\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 -$
$4\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2v_2v_1 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6\omega_{19}v_2v_1 + \omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 -$
$8\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6\omega_{19}v_2v_1 + 8\omega_{13}\omega_7v_3^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 +$
$4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 - 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6\omega_{19}v_2v_1 -$
$4\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 + 4\omega_{13}\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 - \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 +$
$2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2v_2^2 - 4\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2v_1 + 4\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 +$
$8\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 -$
$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 - 4\omega_{13}\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2v_2^2 + 4\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 +$
$2\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 - 8\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_{19}v_2v_1 + 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19}v_2v_1 -$
$2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 + 2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2v_2^2 -$
$4\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19}v_2v_1 - 4\omega_{13}\omega_7v_3^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 - 20\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 -$
$4\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19}v_2v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6\omega_{19}v_2v_1$

$C_{45} = -4\omega_7^2c_s^4\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} - 2\omega_7^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 4\omega_7^3c_s^4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} - 8\omega_7^3v_3^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_{19}v_2v_1 - 4\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{19} -$
$\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_1^2 + 4\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_2v_1 + 4\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 4\omega_7^3v_3^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}v_1^2 - 4c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_1^2 -$
$8\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_2v_1 - 4\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_{19} + 4\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{12}\omega_{19} + 4\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19}v_1^2 + 4\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_2v_1 -$
$4\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} - 8\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 + 4\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_{19} - 2\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_1^2 + 4\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_1^2 +$
$4\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{19}v_2v_1 + 4\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_2v_1 - 4\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{12}\omega_{19}v_1^2 - 2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_1^2 - 2\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} -$
$8\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 + 8\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}v_2v_1 - 4\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_2v_1 - 2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19}v_2v_1 +$
$2\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} - 2\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_1^2 + 4\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19} + 4\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_2v_1 + 8\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_1^2 +$
$\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19}v_1^2 + 8\omega_7^3c_s^2\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 - 4\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_2v_1 + 4\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_{19} +$
$4\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19}v_2v_1 + 4\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} + 4\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{12}\omega_{19}v_1^2 + 4\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{19}v_1^2 -$
$4\omega_7^3v_3^2c_s^2\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} - 8\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_{19}v_1^2 + 8\omega_7^3c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 - 4\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_2v_1 -$
$8\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_2v_1 - 2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_1^2 + 2\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_1^2 + 8\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} +$
$2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_2v_1 - 2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_1^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19}v_1^2 + 2\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{19} - 16\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}v_1^2 +$
$4\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_1^2 - 4\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_2v_1 + 2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 8\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 +$
$2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_1^2 + 4\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_1^2 + \omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_1^2 - 4\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_1^2 + 2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_1^2 +$
$2\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 4\omega_7^3v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_{19} - 8\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 + 2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 8\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_2v_1 -$
$4\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_1^2 + 4\omega_7^3c_s^4\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} + 8\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_2v_1 - 2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19}v_1^2 + 4\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} -$
$8\omega_7^3v_3^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}v_2v_1 + 4\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{12}\omega_{19} - 4\omega_7^3v_3^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 - 2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_2v_1 -$
$12\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_1^2 + 8\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_2v_1 - 2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19} - 8\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 +$
$8\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 + 2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_1^2 - 4\omega_7^3c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_1^2 + 4\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$
$2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19}v_1^2 - 4\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_1^2 - 2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_2v_1 + \omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_1^2 +$
$2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_2v_1 - 8\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}v_2v_1 + 8\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_2v_1 - 4\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} -$
$4\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 8\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} + \omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19}v_1^2 - 2\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 2\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} +$
$4\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}v_2v_1 + 4\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{19}v_2v_1 + 8\omega_7^3v_3^2\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 - \omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 4\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_1^2 -$
$16\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 4\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{12}\omega_{19}v_1^2 - 2\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19}v_1^2 - 8\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} +$
$4\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19}v_2v_1 - 8\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19}v_2v_1 - 12\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} - 2\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_{19}$

$C_{46} = 2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_1 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 - 4\omega_7c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 -$
$4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 - 4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2 -$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 - 2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_2v_1^2 - 2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2v_1^2 +$
$4\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 + 2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 +$
$2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 + 4\omega_7\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 - 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_2v_1^2 +$
$4\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6\omega_{19}v_2 + 2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 -$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 - 4\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 - 4\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 -$
$2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 +$
$2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 - 4c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 + 4c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 +$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6\omega_{19}v_2 + 2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 + 4\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 -$
$2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 - \omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_2^2v_1 +$

$2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 - 8\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 + 6\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 +$
$4\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 - 10\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 +$
$4\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2 - 4\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_{19}v_2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2 + 4\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_2v_1^2 -$
$2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 - \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1 - 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 -$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 - 4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 -$
$4\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2 + 2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 + \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2 +$
$4\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6v_2 +$
$\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2v_1^2 - \omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 + 4\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 -$
$4\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 - 4\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 +$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 - 2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 -$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1 + 2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - 4\omega_7\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 +$
$\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_2 - 2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 +$
$2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 - 4\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 + 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_2^2v_1 -$
$4\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 + 2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 -$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2 - 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 + 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 +$
$2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 + 4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 +$
$2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_2^2v_1 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 -$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 - 4\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 - 2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2v_1^2 +$
$4\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6\omega_{19}v_2 - 2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 + \omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_2v_1^2 +$
$4\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 + 2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 - 2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 +$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 + 4\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 -$
$\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_1 + 2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 - 4\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_1 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2 -$
$4\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_2^2v_1 + 4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2v_1^2 + 2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 + 4\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 +$
$4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_{19}v_2 -$
$4\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 + \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_1 + 3\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}v_2 +$
$4\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6v_2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19}v_2 + 2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2v_1 -$
$\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_{19}v_2 + 2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 +$
$4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19}v_2 - \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 +$
$\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 + 4\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 - 2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2v_1^2 -$
$4\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2^2v_1 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19}v_2$

$C_{47} = \omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - \omega_{10}\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} -$
$\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} -$
$2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} + \omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2 +$
$2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}v_2^2\omega_{16} -$
$4\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_{15}\omega_{19}v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1 - 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2 - 2\omega_{10}\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} - \omega_{10}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1\omega_{16} - 2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} -$
$2\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2 - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 + \omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2 + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_2^2\omega_{16} -$
$8\omega_{10}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1 + 2\omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2 +$
$\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} + \omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2 +$
$\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}v_1^2\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} + \omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} +$
$4\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} - 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1^2\omega_{16} + \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_2^2\omega_{16} +$
$2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1^2\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} + \omega_{10}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} -$
$2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2 + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} -$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2 + 2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 - 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 -$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}v_2^2\omega_{16} - 2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1\omega_{16} - \omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1\omega_{16} -$
$2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1 + 2\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1^2\omega_{16} - 2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}v_1^2\omega_{16} - \omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - \omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 - 8\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 +$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 - 2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} + 4\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_{15}\omega_{19}v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1\omega_{16} + 12\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1 - 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} - 2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2 +$
$2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} + \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 + \omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} + \omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_1\omega_{16} +$
$\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1\omega_{16} + \omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1^2\omega_{16} - 2\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} - \omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} +$

$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2 + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}v_2^2\omega_{16} +$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2\omega_{16} + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + \omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2 - 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2 - \omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2 - 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 -$
$2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} -$
$2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2 - 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} - \omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} +$
$\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}v_1^2\omega_{16} - 2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_1\omega_{16} + \omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1\omega_{16} +$
$\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} - \omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2 - \omega_{10}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} +$
$4\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} - 2\omega_{10}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1 - 4\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_1\omega_{16} -$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2\omega_{16} - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2 -$
$2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1^2\omega_{16} - \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_1^2\omega_{16} + 2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^2v_3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2\omega_{16} + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2 +$
$2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} -$
$\omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} - 2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} -$
$8\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}v_2^2\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2 +$
$\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} - 2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}v_1\omega_{16} + 2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 -$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}v_1^2\omega_{16} + 2\omega_7^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1 + 2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} +$
$\omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2\omega_{16} + 4\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} + 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} -$
$\omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} - \omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1^2\omega_{16} - \omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} -$
$2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1 + 2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} - \omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} +$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2 + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} -$
$\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} -$
$\omega_{10}\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}v_1\omega_{16} + \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} - \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} -$
$2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2 + 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1 + 2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + \omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} +$
$\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2 + \omega_{10}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_1^2\omega_{16} - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2 - \omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} -$
$\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1^2\omega_{16} - 2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2 -$
$2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2 - 2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{19}v_2^2v_1^2\omega_{16} +$
$\omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_2^2\omega_{16} - 2\omega_{10}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} -$
$\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1^2\omega_{16} - \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_1^2\omega_{16} + 2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2\omega_{16} + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2 +$
$2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} -$
$\omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1^2\omega_{16} - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} -$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2 - \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}v_1\omega_{16} - \omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} +$
$\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_1\omega_{16} + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1^2\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2 -$
$\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_1\omega_{16} + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} + 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2\omega_{16} + 2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2 +$
$2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{19}v_2^2v_1^2\omega_{16} + \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1^2\omega_{16} - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} -$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1 + \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_1^2\omega_{16} - \omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_2^2\omega_{16} +$
$2\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} - 2\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2\omega_{16} - 4\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16} +$
$2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}v_2^2\omega_{16} - 2\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_2^2v_1\omega_{16} - 2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1^2$

$C_{48} = 12\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$12\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} - 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 6\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2^2\omega_{16} -$

$60\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} +$
$24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 6\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{16} + 24\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$24\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 - 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_2^2\omega_{16} + 24\omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1 -$
$24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_1\omega_{16} + 12\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_1\omega_{16} - 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 +$
$24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 24\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 24\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 -$
$12\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{16} + 24\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2v_1\omega_{16} -$
$12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2\omega_{19}\omega_{16} -$
$24\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2v_1\omega_{16} + 12\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_1\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$6\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 36\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}v_2^2\omega_{16} + 12\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}v_2^2 -$
$12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 6\omega_{10}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} - 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6\omega_{19}v_2^2\omega_{16} -$
$6\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 24\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_2^2\omega_{16} -$
$36\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 24\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1 - 24\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} - 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 24\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} -$
$24\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_2^2\omega_{16} - 24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_1 - 6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$48\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$24\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 6\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{16} - 12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} -$
$24\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 12\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 - 24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} + 24\omega_{10}\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} +$
$12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 24\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} -$
$24\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 24\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$18\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}\omega_{16} + 6\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} -$
$12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 12\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 -$
$6\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} -$
$24\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}v_2^2\omega_{16} + 12\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 + 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16} +$
$24\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1 - 24\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 + 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} -$
$12\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 + 6\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$12\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} - 12\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 -$
$12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 24\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 +$
$24\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 36\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_2^2\omega_{16} + 24\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 -$
$18\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 +$
$12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} +$
$6\omega_{10}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2v_1\omega_{16} + 12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} +$
$6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_1\omega_{16} -$
$24\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 6\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$6\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 24\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} -$
$24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 12\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 6\omega_{10}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{16} -$
$24\omega_{10}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_1\omega_{16} + 24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$12\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19}\omega_{16} - \omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 24\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1 +$
$12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 24\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 24\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_1\omega_{16} -$
$60\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 18\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{19}\omega_{16} +$
$12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}v_2^2 + 6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$18\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} + 12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{19}\omega_{16} - 6\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$24\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 12\omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{16} - 6\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} +$
$24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 24\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{16} +$
$12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 6\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$12\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} + 24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 24\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} +$
$12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 24\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} +$
$24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 24\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} -$
$2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 12\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} - 6\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} +$
$12\omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 + 24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1 +$
$12\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 - 12\omega_{10}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 - 12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$6\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_7^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}v_2^2 + 12\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}v_2^2\omega_{16} -$
$12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 + 24\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_1\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$12\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{16} - 24\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_1\omega_{16} +$
$12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}v_2^2\omega_{16} - 12\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} -$
$6\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 12\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 10\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}\omega_{16} -$
$12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19}\omega_{16} - 6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{19}\omega_{16} -$
$6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} + 24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 - 24\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1 -$
$24\omega_{10}\omega_7^2v_3\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$42\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 12\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_1\omega_{16} -$

$12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19}\omega_{16} + 24\omega_{10}\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 - 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 +$
$12\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 6\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$24\omega_{10}\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2v_1\omega_{16} - 12\omega_{10}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$24\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_1\omega_{16} - 6\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$24\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}\omega_{16} +$
$12\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2^2\omega_{16} + 24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_1\omega_{16} +$
$12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19}\omega_{16} + 6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$12\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} -$
$24\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 12\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} +$
$12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2v_1\omega_{16} +$
$12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$18\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 6\omega_7^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} +$
$12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} + 12\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 - 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} +$
$6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} + 12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 6\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} +$
$24\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 24\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1 - 12\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 +$
$12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 + 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$24\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} +$
$12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6\omega_{19}v_2^2\omega_{16} - 24\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{16} -$
$24\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 24\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2 -$
$24\omega_{10}\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1 + 12\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$6\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} + 24\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$24\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1 - 12\omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} + 12\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{19}v_2^2\omega_{16} +$
$6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} -$
$6\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\omega_{16} + 6\omega_{10}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$6\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} - 6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2\omega_{16} +$
$12\omega_{10}\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2v_2^2v_1\omega_{16} - 12\omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 24\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_1\omega_{16} +$
$24\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19}\omega_{16} - 6\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_{16}$

$C_{49} = -4\omega_{10}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 - 4\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 -$
$2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 + 4\omega_{10}^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 2\omega_{10}^2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 -$
$4\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1^2\omega_{16}^2 - 2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1^2\omega_{16}^2 + 8\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} -$
$4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}^2 + 2\omega_{10}^2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 +$
$2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1 +$
$4\omega_{10}^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 + 6\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16} +$
$2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} + 4\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 -$
$4\omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} + 2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 8\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$
$2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 -$
$4\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 4\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 -$
$2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 + 2\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 +$
$2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} +$
$4\omega_{10}^2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} - 4\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 +$
$4\omega_{10}^2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} - 4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$
$4\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} + 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16}^2 -$
$4\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 2\omega_{10}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6\omega_{19}v_1^2\omega_{16}^2 +$
$2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 - 2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$
$4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_6\omega_{19}v_1\omega_{16}^2 - 2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 -$
$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} - 4\omega_{10}^2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 +$
$4\omega_{10}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} - 4\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19}\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 -$
$4\omega_{10}^2\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 + 4\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} +$
$2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_{10}^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 -$
$2\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 + 2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 2\omega_{10}^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 +$
$2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_6\omega_{19}\omega_{16}^2 + 2\omega_{10}\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 +$
$4\omega_{10}^2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 + 2\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 -$
$2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16} + 4\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$
$2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16} - 4\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1 +$
$4\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 4\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} -$
$2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 -$
$14\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} - 4\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1^2\omega_{16}^2 -$
$4\omega_{10}^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16} + 2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 +$
$8\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 2\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}\omega_{16}^2 - 2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$
$2\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 - 4\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} - 4\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} -$
$2\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_{10}\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 -$

$$2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$$
$$4\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 +$$
$$4\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1 + 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16} + 4\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 -$$
$$4\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1\omega_{16}^2 -$$
$$4\omega_{10}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} + 4\omega_{10}^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16} - 4\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} -$$
$$4\omega_{10}^2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} - 4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 -$$
$$2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$$
$$4\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 +$$
$$4\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} - 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1^2\omega_{16}^2 +$$
$$4\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16} + 4\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16} + 4\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} -$$
$$2\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}^2 - 2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 + 9\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$$
$$4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}^2 + 2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 -$$
$$\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 -$$
$$2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$$
$$4\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1\omega_{16}^2 - 2\omega_{10}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$$
$$4\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1^2\omega_{16}^2 +$$
$$4\omega_{10}^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} - 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} - 12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} +$$
$$4\omega_{10}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 - 2\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 +$$
$$4\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 8\omega_{10}^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 +$$
$$4\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} - 4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 -$$
$$2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16} + 4\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16} +$$
$$4\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}^2 + 2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 +$$
$$12\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 +$$
$$8\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 + 2\omega_{10}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 -$$
$$2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6v_1\omega_{16}^2 + 4\omega_{10}^2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 -$$
$$2\omega_{10}^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 + 4\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}^2 + 2\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6\omega_{19}\omega_{16}^2 +$$
$$4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16} + 2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_1\omega_{16}^2 -$$
$$2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19}v_1\omega_{16}^2 +$$
$$4\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16} + 4\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 -$$
$$4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} + 4\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 - 4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_6\omega_{19}v_1^2\omega_{16}^2 -$$
$$4\omega_{10}\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16} + 4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} + 4\omega_{10}^2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19}\omega_{16}^2 -$$
$$4\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1^2\omega_{16}^2 + 4\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}v_1\omega_{16}^2$$

$$C_{50} = 4\omega_{10}\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2v_2^2\omega_{16} - 2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1\omega_{16} +$$
$$2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2\omega_{16} + 4\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1 - 4\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}^2v_2^2v_1\omega_{16} -$$
$$4\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2v_1^2\omega_{16} +$$
$$4\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1 - 6\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2v_1\omega_{16} - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2 -$$
$$\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2v_2^2\omega_{16} + 4\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2v_1\omega_{16} +$$
$$4\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}^2v_1\omega_{16} + 4\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2v_1\omega_{16} - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1^2\omega_{16} +$$
$$\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1^2\omega_{16} - 2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1^2 -$$
$$4\omega_{10}\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1\omega_{16} - 4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1 - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2v_2^2\omega_{16} -$$
$$2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1^2 + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1^2 - 2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2 +$$
$$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2 - 2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1^2 + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2v_1^2\omega_{16} + 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1\omega_{16} -$$
$$4\omega_{10}\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1 + 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_{15}\omega_{19}^2v_1\omega_{16} - 2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1^2\omega_{16} -$$
$$\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1^2\omega_{16} - 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2v_2^2v_1\omega_{16} + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2\omega_{16} +$$
$$4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1 - \omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1^2\omega_{16} - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}v_1\omega_{16} -$$
$$2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1^2 - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2v_1^2\omega_{16} - 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2v_1^2\omega_{16} -$$
$$\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2\omega_{16} + 10\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2v_2^2v_1^2\omega_{16} -$$
$$2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}^2v_2^2v_1^2\omega_{16} + 4\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1\omega_{16} - 12\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2v_1\omega_{16} -$$
$$2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2\omega_{16} + 2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2v_2^2v_1\omega_{16} -$$
$$4\omega_{10}\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1\omega_{16} - 2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1^2 - 2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1^2\omega_{16} -$$
$$4\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2 - 2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}^2v_1\omega_{16} +$$
$$6\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2v_1\omega_{16} - 2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1^2\omega_{16} +$$
$$4\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_2^2v_1\omega_{16} - 2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1^2\omega_{16} -$$
$$2\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}v_1\omega_{16} - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2v_1^2\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2v_1^2 +$$
$$2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2v_2^2v_1^2\omega_{16} - \omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2v_2^2v_1^2\omega_{16} + 4\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}^2v_1\omega_{16} +$$

$4\omega_7^3 v_3 c_s^2 \omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1 - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} + 4\omega_{10}\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 v_1\omega_{16} +$
$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} - 2\omega_{10}\omega_7^3 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_1\omega_{16} + 4\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} +$
$2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_1^2\omega_{16} - 2\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1^2 - 2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^3 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} - 4\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1 + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 v_1^2\omega_{16} -$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 v_1\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 v_2^2\omega_{16} - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} +$
$2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_1^2\omega_{16} + 2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2 + \omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_2^2\omega_{16} -$
$2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} - 4\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1\omega_{16} - 4\omega_{10}\omega_7^2 v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} +$
$4\omega_{10}\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1 + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 v_2^2\omega_{16} - 4\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 v_2^2 v_1\omega_{16} -$
$\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} - 2\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_2^2\omega_{16} - 2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 v_2^2 v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5\omega_{15}\omega_{19}^2 v_1\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1^2 + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 +$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 v_2^2\omega_{16} + 4\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} + 4\omega_{10}\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_1\omega_{16} +$
$\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1^2\omega_{16} - 2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} + \omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} - 12\omega_{10}\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 v_2^2 v_1\omega_{16} - 4\omega_{10}\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 v_1\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} -$
$8\omega_{10} v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1\omega_{16} - 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 v_2^2\omega_{16} - 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}^2 v_1^2\omega_{16} -$
$4\omega_{10}\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_1^2\omega_{16} + 4\omega_{10}\omega_7^2 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} -$
$2\omega_{10}\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1\omega_{16} - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} - 2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2 +$
$2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2 + 4\omega_{10}\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1 + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_2^2\omega_{16} +$
$4\omega_{10}\omega_7^2 v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} + 4\omega_{10}\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} v_1\omega_{16} - 2\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}^2 v_2^2 v_1\omega_{16} +$
$4\omega_{10}\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1 + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_1^2\omega_{16} + 4\omega_{10}\omega_7^2 v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1 -$
$4\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}^2 v_1^2\omega_{16} - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 v_1\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} + 2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2 +$
$2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1^2 - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1^2\omega_{16} -$
$4\omega_{10}\omega_7^3 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1 - 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} + \omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} - 2\omega_{10}\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_{19}^2 v_1\omega_{16} + \omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 v_2^2 v_1^2\omega_{16} +$
$4\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 v_2^2 v_1\omega_{16} + 4\omega_{10}\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_1\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1^2\omega_{16} + 2\omega_{10}\omega_7^3 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1\omega_{16} + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_2^2\omega_{16} -$
$2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1 + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} + 4\omega_{10}\omega_7^2 v_3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1 -$
$2\omega_7^3 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} + 4\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1 - 2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_2^2 v_1^2\omega_{16} +$
$2\omega_{10}\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 v_1\omega_{16} - 8\omega_{10}\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 v_1\omega_{16} - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} +$
$4\omega_{10}\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} v_1\omega_{16} + 2\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1^2 + 4\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} -$
$2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2 + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} +$
$2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_1^2\omega_{16} - 4\omega_{10}\omega_7^3 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1 + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}^2 v_2^2\omega_{16} -$
$2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_2^2\omega_{16} - 4\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1 - 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_1^2\omega_{16} -$
$4\omega_7^3 v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} + 2\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} + \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_1^2\omega_{16} -$
$4\omega_{10}\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1\omega_{16} - 2\omega_{10}\omega_7^3 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}^2 v_2^2\omega_{16} - 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 v_1^2\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} +$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1\omega_{16} - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_2^2\omega_{16} + \omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2\omega_{16} +$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 v_1^2\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_2^2 v_1^2\omega_{16} -$
$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 v_2^2\omega_{16} + 2\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 - \omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} -$
$2\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_1^2\omega_{16} + 4\omega_{10}\omega_7^2 v_3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} - 4\omega_{10}\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 v_2^2 v_1\omega_{16} -$
$4\omega_{10}\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_1 + 4\omega_{10}\omega_7 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_1\omega_{16} - 2\omega_{10}\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{15}\omega_{19}^2 v_1\omega_{16} +$
$2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2 v_1^2\omega_{16} + 6\omega_{10}\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 v_1\omega_{16} +$
$\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} v_2^2\omega_{16} + 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 v_1^2\omega_{16} - 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 v_2^2$

$C_{51} = 36\omega_{10}^3\omega_7^2 v_3^2 c_s^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 18\omega_{10}^2\omega_7^3 c_s^4\omega_{19}\omega_{16}^2 + 36\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2 + 36\omega_{10}^3\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{19} +$
$72\omega_{10}^2\omega_7 v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 + 18\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{19}\omega_{16}^2 + 12\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 + 12\omega_{10}^2\omega_7^3 c_s^2\omega_{19} v_2^2\omega_{16} + 12\omega_{10}^3\omega_7\omega_{23}c_s^4\omega_{19}\omega_{16} +$
$6\omega_{10}^2\omega_7^3 v_3^2\omega_{19}\omega_{16}^2 - 54\omega_{10}\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 12\omega_{10}^3\omega_7^2 c_s^2\omega_{19} v_2^2\omega_{16}^2 - 18\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16} - 72\omega_{10}^3\omega_7 v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} + 12\omega_{10}^3\omega_7^2 c_s^2 v_2^2\omega_{16}^2 -$
$36\omega_{10}^2\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} - 24\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{19}\omega_{16} + 18\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{16}^2 - 18\omega_{10}^2\omega_7^3 v_3^2 c_s^2\omega_{19}\omega_{16}^2 - 6\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 12\omega_{10}^3\omega_7^3 v_3^2\omega_{19} v_2^2\omega_{16} +$
$6\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{19} v_2^2\omega_{16}^2 - 12\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19} v_2^2 - 12\omega_{10}^3\omega_7^2 v_3^2\omega_{23}\omega_{19} v_2^2 - 6\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19} v_2^2\omega_{16} - 2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19} v_2^2\omega_{16}^2 -$
$12\omega_{10}^2\omega_7^3 c_s^2\omega_{19}\omega_{16} - 6\omega_{10}^3\omega_7^3 v_3^2 v_2^2\omega_{16}^2 + 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16} + 36\omega_{10}^3\omega_7^2 v_3^2 c_s^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{16}^2 - 12\omega_{10}^3\omega_7^3 v_3^2\omega_{23}\omega_{19} v_2^2\omega_{16} -$
$36\omega_{10}^2\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{16}^2 - 12\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 12\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19} - 42\omega_{10}^3\omega_7^2\omega_{23}c_s^4\omega_{19}\omega_{16} - 12\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{19} v_2^2 + 24\omega_{10}^3\omega_7 v_3^2\omega_{23}\omega_{19}\omega_{16} +$
$6\omega_{10}^2\omega_7^3 c_s^2\omega_{19}\omega_{16}^2 + 12\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{19} + 18\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19} v_2^2\omega_{16} - 36\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 12\omega_7^3 v_3^2\omega_{23}\omega_{19}\omega_{16}^2 - 12\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19} v_2^2 +$
$12\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19}\omega_{16} - 12\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 88\omega_{10}^3\omega_7^2\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 42\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16} + 12\omega_{10}^3\omega_7^2 v_3^2\omega_{23}\omega_{16}^2 - 12\omega_{10}^2\omega_7^2 v_3^2\omega_{23} v_2^2\omega_{16}^2 +$
$24\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{19} v_2^2\omega_{16} + 6\omega_{10}^3\omega_7^3 v_3^2\omega_{19} v_2^2\omega_{16}^2 + 12\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19} + 12\omega_{10}^3\omega_7^2 v_3^2 v_2^2\omega_{16}^2 + 12\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{19} v_2^2\omega_{16}^2 - 18\omega_{10}^3\omega_7^3 v_3^2 c_s^2\omega_{16}^2 -$
$12\omega_{10}^2\omega_7^2\omega_{23}c_s^2 v_2^2\omega_{16}^2 + \omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19} v_2^2\omega_{16}^2 + 12\omega_{10}^3\omega_7^2 c_s^2\omega_{19} v_2^2\omega_{16} - 18\omega_{10}^3\omega_7^3 c_s^4\omega_{16}^2 - 36\omega_{10}\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} + 6\omega_{10}^3\omega_7^3 v_3^2\omega_{16}^2 +$
$12\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{19} + 12\omega_7^3\omega_{23}c_s^2\omega_{19} v_2^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 6\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{19}\omega_{16}^2 + 36\omega_{10}^2\omega_7^3 v_3^2 c_s^2\omega_{19}\omega_{16} - 72\omega_{10}^2\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 +$
$12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16} + 108\omega_{10}^3\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} - 36\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{16}^2 - 36\omega_{10}^3\omega_7^2 v_3^2 c_s^2\omega_{19}\omega_{16}^2 + 12\omega_7^3 v_3^2\omega_{23}\omega_{19} v_2^2\omega_{16}^2 - 36\omega_{10}^3\omega_7^2 v_3^2\omega_{23}\omega_{19}\omega_{16} -$
$12\omega_{10}^3\omega_7^2 c_s^2\omega_{16}^2 + 36\omega_{10}^2\omega_7^3 c_s^4\omega_{19}\omega_{16} - 18\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{19}\omega_{16} - 6\omega_{10}^3\omega_7^3 c_s^2 v_2^2\omega_{16}^2 + 180\omega_{10}^3\omega_7\omega_{23}c_s^4\omega_{19}\omega_{16}^2 -$
$12\omega_{10}^2\omega_7^3 v_3^2\omega_{19}\omega_{16} - 6\omega_{10}^2\omega_7^3 c_s^2\omega_{19} v_2^2\omega_{16}^2 - 12\omega_{10}^3\omega_7^2 c_s^2\omega_{19}\omega_{16} - 24\omega_{10}^2\omega_7 v_3^2\omega_{23}\omega_{19}\omega_{16}^2 + 6\omega_{10}^2\omega_7^3\omega_{23}c_s^2 v_2^2\omega_{16}^2 + 18\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19} v_2^2\omega_{16}^2 -$
$12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19} v_2^2\omega_{16} + 12\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19} v_2^2\omega_{16}^2 + 36\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 12\omega_{10}^3\omega_7^2 v_3^2\omega_{19} v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^3 v_3^2\omega_{23} v_2^2\omega_{16}^2 +$
$36\omega_{10}^3\omega_7^2 v_3^2\omega_{23}\omega_{19} v_2^2\omega_{16} + 12\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 24\omega_{10}^2\omega_7^2 v_3^2\omega_{23}\omega_{19} v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^3 v_3^2\omega_{19} v_2^2\omega_{16} + 5\omega_{10}^3\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2 -$
$12\omega_{10}^3\omega_7^3\omega_{23}c_s^4\omega_{19} - 6\omega_{10}^3\omega_7^3 c_s^2\omega_{19}\omega_{16}^2 + 18\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19} v_2^2\omega_{16} - 48\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 12\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{19} v_2^2\omega_{16} + 6\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16} +$
$36\omega_{10}\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 + 12\omega_{10}^3\omega_7^3 v_3^2\omega_{19}\omega_{16} + 12\omega_{10}^3\omega_7^3 v_3^2\omega_{23}\omega_{19}\omega_{16} + 18\omega_{10}^3\omega_7^3 v_3^2 c_s^2\omega_{19}\omega_{16}^2 + 72\omega_{10}^2\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} - 36\omega_{10}^3\omega_7^3 c_s^4\omega_{19}\omega_{16} -$

$36\omega_{10}^3\omega_7^2c_s^4\omega_{19}\omega_{16}^2 + 24\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16}^2 + 12\omega_{10}^3\omega_7^2v_3^2\omega_{19}\omega_{16}^2 - 12\omega_{10}^3\omega_7^3c_s^2\omega_{19}v_2^2\omega_{16} - 18\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 6\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{16}^2 -$
$12\omega_{10}^3\omega_7^3v_3^2\omega_{23}\omega_{19} - 36\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19} + 36\omega_{10}^3\omega_7^2c_s^4\omega_{19}\omega_{16} + 6\omega_{10}^3\omega_7^3c_s^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16} - 36\omega_{10}^3\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} +$
$6\omega_{10}^3\omega_7^3c_s^2\omega_{19}v_2^2\omega_{16}^2 - 84\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 12\omega_{10}^3\omega_7^2v_3^2\omega_{19}\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{16}^2 - \omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 36\omega_{10}^3\omega_7^2c_s^4\omega_{16}^2 - 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16}^2 -$
$12\omega_{10}^3\omega_7^2v_3^2\omega_{16}^2 + 12\omega_{10}^3\omega_7^2v_3^2\omega_{23}\omega_{19} - 36\omega_{10}^3\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19} - 6\omega_{10}^3\omega_7^3v_3^2\omega_{19}\omega_{16}^2 + 36\omega_{10}^3\omega_7^2c_s^4\omega_{16}^2 - 96\omega_{10}^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2 +$
$18\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 36\omega_{10}^3\omega_7^3v_3^2c_s^2\omega_{19}\omega_{16} + 18\omega_{10}^3\omega_7^3c_s^4\omega_{19}\omega_{16}^2 - 6\omega_{10}^2\omega_7^3v_3^2\omega_{19}v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 12\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16} -$
$12\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 + 18\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{16}^2 + 30\omega_{10}^3\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16} + 12\omega_{10}^3\omega_7^3c_s^2\omega_{19}\omega_{16} - 12\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 -$
$24\omega_{10}^3\omega_7v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16} - 18\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2 + 12\omega_{10}^3\omega_7^2\omega_{23}c_s^4\omega_{19} + 24\omega_{10}^2\omega_7v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2 + 12\omega_{10}^3\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2 +$
$12\omega_{10}^3\omega_7^2c_s^2\omega_{19}\omega_{16}^2 + 150\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 + 12\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19}v_2^2 - 12\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}^3\omega_7^2v_3^2\omega_{19}v_2^2\omega_{16}$

$C_{52} =$
$12\omega_{10}^3\omega_7^2v_3^2c_s^2\omega_{19}\omega_{16} - 6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 6\omega_{10}^2\omega_7^3c_s^4\omega_{19}\omega_{16}^2 + 12\omega_{10}^3\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19} + 24\omega_{10}^2\omega_7v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 + 18\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{19}\omega_{16}^2 +$
$36\omega_{10}^2\omega_7^3c_s^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}^3\omega_7\omega_{23}c_s^4\omega_{19}\omega_{16} + 6\omega_{10}^2\omega_7^3v_3^2\omega_{19}\omega_{16}^2 - 18\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 36\omega_{10}^3\omega_7^2c_s^2\omega_{19}v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16} -$
$24\omega_{10}^3\omega_7v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} + 36\omega_{10}^3\omega_7^2c_s^2v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} - 24\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{19}\omega_{16}^2 + 6\omega_{10}^2\omega_7^3c_s^4\omega_{16}^2 - 6\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{19}\omega_{16}^2 -$
$6\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 36\omega_{10}^3\omega_7^3v_3^2\omega_{19}v_2^2\omega_{16} + 18\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2 + 24\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}v_2^2 - 36\omega_{10}^3\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2 + 78\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16} -$
$18\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^3c_s^2\omega_{19}\omega_{16} - 18\omega_{10}^3\omega_7^3v_3^2v_2^2\omega_{16}^2 + 12\omega_{10}^3\omega_7^2v_3^2c_s^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{16}^2 - 36\omega_{10}^3\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16} -$
$12\omega_{10}^2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{16}^2 - 24\omega_{10}^3\omega_7^2\omega_{23}c_s^4\omega_{19}\omega_{16} - 36\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2 + 24\omega_{10}^3\omega_7v_3^2\omega_{23}\omega_{19}\omega_{16} + 6\omega_{10}^2\omega_7^3c_s^2\omega_{19}\omega_{16}^2 - 144\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16} +$
$6\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 12\omega_7^3v_3^2\omega_{23}\omega_{19}\omega_{16}^2 + 24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}v_2^2 - 12\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19}\omega_{16} - 108\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 - 4\omega_{10}^3\omega_7^2\omega_{23}c_s^4\omega_{19}\omega_{16}^2 -$
$12\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16} + 12\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{16}^2 - 36\omega_{10}^2\omega_7^2v_3^2\omega_{23}v_2^2\omega_{16}^2 + 72\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16} + 18\omega_{10}^3\omega_7^3v_3^2\omega_{19}v_2^2\omega_{16}^2 + 36\omega_{10}^3\omega_7^2v_3^2v_2^2\omega_{16}^2 +$
$36\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2 - 6\omega_{10}^3\omega_7^3v_3^2c_s^2\omega_{16}^2 - 36\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_2^2\omega_{16}^2 + 36\omega_{10}^3\omega_7^2c_s^2\omega_{19}v_2^2\omega_{16} - 6\omega_{10}^3\omega_7^3c_s^4\omega_{16}^2 - 12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} +$
$6\omega_{10}^3\omega_7^3v_3^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{19} + 6\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 6\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{19}\omega_{16}^2 + 12\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{19}\omega_{16} - 24\omega_{10}^2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 +$
$36\omega_{10}^3\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} - 12\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{16}^2 - 12\omega_{10}^3\omega_7^2v_3^2c_s^2\omega_{19}\omega_{16}^2 + 36\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2 - 36\omega_{10}^3\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16} - 12\omega_{10}^3\omega_7^2c_s^2\omega_{16}^2 +$
$12\omega_{10}^2\omega_7^3c_s^4\omega_{19}\omega_{16} + 24\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{19}\omega_{16} - 18\omega_{10}^3\omega_7^3c_s^2v_2^2\omega_{16}^2 + 18\omega_{10}^3\omega_7\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 12\omega_{10}^2\omega_7^3v_3^2\omega_{19}\omega_{16} -$
$18\omega_{10}^2\omega_7^3c_s^2\omega_{19}v_2^2\omega_{16}^2 - 12\omega_{10}^3\omega_7^2c_s^2\omega_{19}\omega_{16} - 24\omega_{10}^2\omega_7v_3^2\omega_{23}\omega_{19}\omega_{16}^2 + 18\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_2^2\omega_{16}^2 + 180\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 +$
$72\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{19}\omega_{16} + 84\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 + 12\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 36\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2 +$
$18\omega_{10}^2\omega_7^3v_3^2\omega_{23}v_2^2\omega_{16}^2 + 108\omega_{10}^3\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16} + 12\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 72\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2 + 36\omega_{10}^2\omega_7^3v_3^2\omega_{19}v_2^2\omega_{16} -$
$\omega_{10}^3\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 6\omega_{10}^3\omega_7^3c_s^2\omega_{19}\omega_{16}^2 - 132\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 36\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16} - 12\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16} +$
$12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 + 12\omega_{10}^3\omega_7^3v_3^2\omega_{19}\omega_{16} + 12\omega_{10}^3\omega_7^3v_3^2\omega_{23}\omega_{19}\omega_{16} + 6\omega_{10}^3\omega_7^3v_3^2c_s^2\omega_{19}\omega_{16}^2 + 24\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} - 12\omega_{10}^3\omega_7^3c_s^4\omega_{19}\omega_{16} -$
$12\omega_{10}^3\omega_7^2c_s^4\omega_{19}\omega_{16}^2 + 24\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16}^2 + 12\omega_{10}^3\omega_7^2v_3^2\omega_{19}\omega_{16}^2 - 36\omega_{10}^3\omega_7^2c_s^2\omega_{19}v_2^2\omega_{16} - 24\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 6\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{16}^2 -$
$12\omega_{10}^3\omega_7^3v_3^2\omega_{23}\omega_{19} - 12\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19} + 12\omega_{10}^3\omega_7^2c_s^4\omega_{19}\omega_{16} + 6\omega_{10}^3\omega_7^3c_s^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16} - 12\omega_{10}^3\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} +$
$18\omega_{10}^3\omega_7^3c_s^2\omega_{19}v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{19}\omega_{16}^2 - 12\omega_{10}^3\omega_7^2v_3^2\omega_{19}\omega_{16} - 12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19}\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{16}^2 - 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16}^2 -$
$12\omega_{10}^3\omega_7^2v_3^2\omega_{16}^2 + 12\omega_{10}^3\omega_7^2v_3^2\omega_{23}\omega_{19} - 12\omega_{10}^3\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19} - 6\omega_{10}^3\omega_7^3v_3^2\omega_{19}\omega_{16}^2 + 12\omega_{10}^3\omega_7^2c_s^4\omega_{16}^2 - 12\omega_{10}^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2 + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 -$
$48\omega_{10}^2\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 12\omega_{10}^3\omega_7^3v_3^2c_s^2\omega_{19}\omega_{16} + 6\omega_{10}^3\omega_7^3c_s^4\omega_{19}\omega_{16}^2 - 18\omega_{10}^2\omega_7^3v_3^2\omega_{19}v_2^2\omega_{16}^2 - 36\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16} -$
$84\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{16}^2 + 12\omega_{10}^3\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16} + 12\omega_{10}^3\omega_7^3c_s^2\omega_{19}\omega_{16} - 42\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 -$
$72\omega_{10}^3\omega_7v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16} - 54\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2 + 60\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16} + 72\omega_{10}^2\omega_7v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2 + 36\omega_{10}^3\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2 +$
$12\omega_{10}^3\omega_7^2c_s^2\omega_{19}\omega_{16}^2 + 24\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{19}\omega_{16}^2 + 18\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2 - 24\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19}v_2^2 + 60\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16} + 36\omega_{10}^3\omega_7^2v_3^2\omega_{19}v_2^2\omega_{16}$

$C_{53} = 8\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 4\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 15\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 + 5\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 - 6\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} +$
$4\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 2\omega_{10}^3\omega_7^3\omega_{11}\omega_{19}v_2^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 4\omega_{10}^3\omega_7^2c_s^2\omega_{11}\omega_{19}\omega_{16}^2 + \omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 -$
$8\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 - 7\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2\omega_{16} - 4\omega_{10}^3\omega_7^2\omega_{11}\omega_{19}\omega_{16}^2 - 6\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 - 4\omega_{10}^3\omega_7^2\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 - 4\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2 -$
$16\omega_{10}^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 - 3\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2 - 2\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{16}^2 - 4\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 -$
$\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 + 2\omega_{10}^3\omega_7^3c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 - 4\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}^2\omega_{16} - 4\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + \omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 - 2\omega_{10}^3\omega_7\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 +$
$8\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 - 4\omega_{10}^3\omega_7^3c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}^2\omega_{16}^2 - 4\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 + 6\omega_{10}^3\omega_7\omega_{23}\omega_{11}\omega_{19}^2\omega_{16} +$
$7\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 4\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2 + 4\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - \omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 + 11\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} +$
$4\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 + 4\omega_{10}^3\omega_7^2\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 2\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 - 8\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 26\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 +$
$4\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2\omega_{16} + 2\omega_{10}^3\omega_7^3\omega_{11}\omega_{19}\omega_{16}^2 - 9\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16} - \omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 + 2\omega_{10}^3\omega_7\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 -$
$4\omega_{10}^3\omega_7^2\omega_{11}\omega_{19}^2\omega_{16} - 4\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 2\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 - 2\omega_{10}^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 - 3\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 +$
$12\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 + 9\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 8\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 + 4\omega_{10}^3\omega_7^2c_s^2\omega_{11}\omega_{19}^2\omega_{16} + \omega_{10}^3\omega_7^3\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2 -$
$2\omega_{10}^3\omega_7^3\omega_{11}\omega_{19}^2\omega_{16}^2 + 12\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 + 3\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 - 4\omega_{10}^3\omega_7^3\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 8\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 +$
$3\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 + 13\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 2\omega_{10}^3\omega_7^3\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 + 3\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16} +$
$4\omega_{10}^3\omega_7^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2 - 2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 5\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 2\omega_{10}^3\omega_7^2c_s^2\omega_{11}\omega_{19}\omega_{16}^2 - 8\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 4\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19}^2\omega_{16}^2 -$
$2\omega_{10}\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 + 4\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - \omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 - 4\omega_{10}^3\omega_7^2c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 + 2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 + 2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}^2\omega_{16}^2 +$
$2\omega_{10}^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 + 4\omega_{10}^3\omega_7^3\omega_{11}\omega_{19}^2\omega_{16} + 4\omega_{10}^3\omega_7^2\omega_{11}\omega_{19}^2\omega_{16}^2 - 6\omega_{10}^3\omega_7\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 5\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2 +$
$4\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 4\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{16}^2 - 24\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 - 2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 4\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2$

$C_{54} = 4\omega_7^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 - 3\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_7^2v_3^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 +$
$2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 + 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 -$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 12c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} +$
$6\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 4\omega_7\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 -$
$3\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 - 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} -$
$4\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 - 4\omega_7v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 - 8\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 +$
$8\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2 - 4\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 +$
$4\omega_7^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$3\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 - 6\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 -$

$2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2 - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 9\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$8\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 3\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 + 2\omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 +$
$12\omega_7^2c_s^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 + 8\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 -$
$4\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 - 12\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 24\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 -$
$6\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 4\omega_7^2v_3^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 +$
$12\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 + 24\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$9\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 4v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7v_3^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 +$
$4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 12\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 4\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 -$
$4\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 - 4v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 + 12\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$4\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 - 6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 4\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} -$
$2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 - 4\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2$

$C_{55} = -24\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 - 36\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 42\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 6\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 -$
$6\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 18\omega_7v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 + 12\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 + 24\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} + 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 - 6\omega_7^2v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 -$
$12\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 24\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_{19}^2 + 12\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 18\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 -$
$12\omega_7v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 12\omega_7v_3^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 +$
$12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 - 3\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 6\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} +$
$9\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 18\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 24c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 +$
$\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 24\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 6\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$36\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 +$
$12\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 3\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 54\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 +$
$36c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 + 12\omega_7v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 9\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 -$
$36c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 12v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 +$
$6\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 + 6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 9\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 6\omega_7^2v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$12\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 18\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 12\omega_7c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 + 30\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 +$
$6\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 + 36\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 -$
$54\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 12\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 6\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 -$
$12\omega_7\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 - 6\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 18\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 +$
$6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 42\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$24\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_{19}^2 - 12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 + 12\omega_7c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 18\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 -$
$9\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 6\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 54\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 -$
$6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 24c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 - 12\omega_7c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 -$
$12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 12\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 54\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 12\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 - 6\omega_7^2v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2$

$C_{56} = \omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 - \omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{19} + \omega_7^3v_3^2\omega_8^2\omega_5^2\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_{19}^2 + 2\omega_7^2\omega_8^2\omega_5^2\omega_{19}^2 + 2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{19} - \omega_7^3\omega_{20}\omega_8^2\omega_5^2 +$
$2\omega_7^2v_3^2\omega_8\omega_5^2\omega_{19}^2 + \omega_7^3\omega_8^2\omega_5^2\omega_{19} - 11\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{19}^2 - \omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} - \omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2 - \omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{19}^2 +$
$2\omega_7^3v_3^2\omega_8\omega_5\omega_{19}^2 + 2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{19} + 2\omega_7^3c_s^2\omega_{20}\omega_8\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 7\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 + 2\omega_7^3c_s^2\omega_{20}\omega_5\omega_{19}^2 - 2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{19}^2 -$
$7\omega_7^3c_s^2\omega_{20}\omega_8\omega_5\omega_{19}^2 + \omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - 8c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19} - 2\omega_7^3\omega_8\omega_5\omega_{19}^2 - 2\omega_7^3c_s^2\omega_8\omega_5^2\omega_{19}^2 - 6\omega_7c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 -$
$\omega_7^3\omega_{20}\omega_8\omega_5^2\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 - \omega_7^3\omega_8^2\omega_5^2\omega_{19}^2 + \omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^2 - 2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{19} + 6\omega_7c_s^2\omega_{20}\omega_8\omega_5^2\omega_{19}^2 - \omega_7^3v_3^2\omega_8^2\omega_5^2\omega_{19} - \omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 -$
$\omega_7^3v_3^2\omega_{20}\omega_8\omega_5\omega_{19}^2 - 2\omega_7^2\omega_8^2\omega_5^2\omega_{19} - \omega_7^3c_s^2\omega_8^2\omega_5\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_5^2\omega_{19}^2 + \omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 + \omega_7^3\omega_8^2\omega_5\omega_{19}^2 + \omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{19}^2 + 2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{19}^2 +$
$4\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + \omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{19}^2 + \omega_7^3v_3^2\omega_{20}\omega_8\omega_5^2\omega_{19}^2 + 5\omega_7^3c_s^2\omega_{20}\omega_8\omega_5^2\omega_{19}^2 - 2\omega_7^3c_s^2\omega_{20}\omega_5^2\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 2\omega_7^3\omega_8\omega_5^2\omega_{19}^2 -$
$\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 + 2\omega_7^2v_3^2\omega_8^2\omega_5^2\omega_{19} + 2\omega_7^3c_s^2\omega_8\omega_5\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 + \omega_7^3\omega_{20}\omega_8\omega_5\omega_{19}^2 + 13\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - 2\omega_7^2\omega_8\omega_5^2\omega_{19}^2 +$
$\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5\omega_{19} - 2\omega_7^3v_3^2\omega_8\omega_5^2\omega_{19}^2 - 2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 5\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - 2\omega_7^2v_3^2\omega_8^2\omega_5^2\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{19} + \omega_7^3\omega_{20}\omega_8^2\omega_5^2\omega_{19} -$
$\omega_7^3v_3^2\omega_8^2\omega_5\omega_{19}^2 - \omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - \omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{19} + 4\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_{19}^2 - 2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + \omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2 + \omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}$

$C_{57} = 4\omega_7^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 - 3\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 12\omega_7^2v_3^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$6\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 12\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 +$
$6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2 - 4\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 + 4\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 -$
$4\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 4c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} +$
$2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 4\omega_7\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 -$
$9\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 - 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} -$
$12\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 - 12\omega_7v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 - 24\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 +$
$24\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2 - 12\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 +$
$4\omega_7^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 - 4\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 4\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$9\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2 - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7^2c_s^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 3\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$8\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 6\omega_7^2v_3^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 3\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 + 2\omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 +$
$4\omega_7^2c_s^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 12\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 + 8\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 -$

$12\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 - 4\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 8\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 -$
$2\omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7^2 v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7 c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$4\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 12\omega_7^2 v_3^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 +$
$4\omega_7 c_s^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 + 8\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 6\omega_7^2 v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$3\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 12v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 12\omega_7 v_3^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7^2 v_3^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 +$
$4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 4\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 12\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 12\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 -$
$12\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 - 4\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 - 12v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 12\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 + 4\omega_7 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$12\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 - 2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 12\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} -$
$2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 - 4\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2$

$C_{58} = -12\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16} - 36\omega_{10}\omega_7^3 c_s^4\omega_{11}^2\omega_{19}^2 + 24\omega_{10}\omega_7\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 12\omega_7^3 v_3^2 c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19}\omega_{16} -$
$36\omega_{10}\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2 v_2^2 + 24\omega_{10}\omega_7 v_3^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 36\omega_{10}\omega_{23}c_s^2\omega_{11}^2 v_2^2\omega_{16} -$
$36\omega_{10}\omega_7^2 c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} + 18\omega_{10}\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 6\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_{10}\omega_7^2 v_3^3\omega_{23}\omega_{11}^2 v_2^2\omega_{16} + 6\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} -$
$18\omega_{10}\omega_7^3 c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^2 v_3^2 c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 6\omega_{10}\omega_7^3 v_3^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} + 36\omega_7^3 c_s^4\omega_{11}^2\omega_{19}^2 -$
$12\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 v_2^2 - 12\omega_{10}\omega_7^2 c_s^2\omega_{11}^2\omega_{19}^2 - 36\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}^2\omega_{16} - 36\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16} - 6\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{16} +$
$72\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 36\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 v_2^2 - 18\omega_{10}\omega_7^3 c_s^4\omega_{11}^2\omega_{19}\omega_{16} + 36\omega_{10}\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 6\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}v_2^2\omega_{16} +$
$3\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} + 12\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2 + 18\omega_{10}\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 12\omega_{10}\omega_7 v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 6\omega_{10}\omega_7^3\omega_{23}\omega_{19}^2 v_2^2\omega_{16} -$
$18\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}^2 v_2^2\omega_{16} + 18\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{10}\omega_7^2 v_3^2\omega_{11}^2\omega_{19}^2 v_2^2 - 6\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16} +$
$54\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_{10}\omega_7^3 v_3^2 c_s^2\omega_{11}^2\omega_{19}^2 - 36\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2 - 18\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} + 36\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2 v_2^2 +$
$6\omega_{10}\omega_7^3 v_3^2 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 6\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{19}^2 v_2^2\omega_{16} - 24\omega_{10}\omega_7 v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 24\omega_{10}\omega_7\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} -$
$5\omega_{10}\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_{10}\omega_7^2 v_3^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} + 3\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 6\omega_{10}\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$
$12\omega_{10}\omega_7^2 c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 12\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2 - 48\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 12\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 v_2^2 - 42\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}\omega_{16} + 18\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2\omega_{16} -$
$36\omega_{10}\omega_7^2 c_s^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2\omega_{16} - 6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{16} + 36\omega_{10}\omega_7^2 c_s^4\omega_{11}^2\omega_{19}^2 + 6\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16} -$
$12\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 6\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 5\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 6\omega_7^3 v_3^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} - 12\omega_{10}\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$
$72\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 6\omega_{10}\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{16} - 3\omega_{10}\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 60\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} - 9\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} +$
$12\omega_{10}\omega_7^2 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 12\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 27\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 v_2^2\omega_{16} - 72\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2 +$
$12\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}^2 v_2^2 + 12\omega_{10}\omega_7^2 v_3^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 36\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 12\omega_{10}\omega_7^2 v_3^2 c_s^2\omega_{11}^2\omega_{19}^2 - 36\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 v_2^2 +$
$\omega_{10}\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_{10}\omega_7^2\omega_{23}\omega_{19}^2 v_2^2\omega_{16} - 6\omega_7^3 v_3^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 48\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 18\omega_7^3 c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} -$
$12\omega_{10}\omega_7^3 v_3^2\omega_{11}^2\omega_{19}^2 v_2^2 + 12\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 9\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 12\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 24\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} -$
$12\omega_7^3 v_3^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2 - 6\omega_{10}\omega_7^3 v_3^2 c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 36\omega_{10}\omega_7^2 c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 24\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 6\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{11}^2 v_2^2\omega_{16} +$
$6\omega_7^3\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{16} - 36\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 v_2^2 - 18\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 144\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 12\omega_7^3\omega_{11}^2\omega_{19}^2 v_2^2 +$
$6\omega_{10}\omega_7^3 c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 18\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_2^2\omega_{16} - 6\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2\omega_{16} - \omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 12\omega_{10}\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$
$18\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 96\omega_{10}\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} + 12\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{16} - 36\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} +$
$18\omega_{10}\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} + 15\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 12\omega_7^3 v_3^2\omega_{11}^2\omega_{19}^2 v_2^2 + 15\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} -$
$6\omega_7^3 v_3^2 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 18\omega_{10}\omega_7^3 c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} - 36\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 36\omega_{10}\omega_7^2 c_s^2\omega_{11}^2\omega_{19}^2 v_2^2 - 12\omega_{10}\omega_7 v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} -$
$45\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 72\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 156\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} + 12\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{19}^2 v_2^2\omega_{16} + 36\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} -$
$108\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 v_2^2\omega_{16} - 12\omega_{10}\omega_7^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 36\omega_{10}\omega_7^2 c_s^4\omega_{11}^2\omega_{19}\omega_{16} + 6\omega_{10}\omega_7^3 v_3^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} - 18\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} -$
$6\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_{10}\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 36\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{19}^2 v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2 - 12\omega_{10}\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} -$
$15\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 24\omega_7^2 v_3^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{16} - 12\omega_{10}\omega_7^2 v_3^2 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 24\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} -$
$12\omega_{10}\omega_7^2\omega_{11}^2\omega_{19}^2 v_2^2 - 15\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16} - 6\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16}$

$C_{59} = -24\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}\omega_{16}^2 + 3\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16} + 48\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 24\omega_{10}^2\omega_7^2 v_3^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 +$
$12\omega_{10}^2\omega_7 v_3^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 + \omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 - 12\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 12\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 - 72\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 +$
$24\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 36\omega_{10}^2\omega_7 v_3^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 + 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2 - 12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 -$
$12\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 - 12\omega_{10}\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 - 36\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2 - 12\omega_{10}^2\omega_7^3 v_3^2\omega_{11}^2\omega_{19}\omega_{16}^2 + 24\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 -$
$24\omega_{10}^2\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 6\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 + 12\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 + 66\omega_{10}^2\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 - 12\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 +$
$24\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 18\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 - 24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{10}^2\omega_7^2 v_3^2\omega_{23}\omega_{19}^2\omega_{16}^2 +$
$90\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2 - 96\omega_{10}^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 36\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19}^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 + 24\omega_{10}\omega_7^2 c_s^2\omega_{11}^2\omega_{19}\omega_{16} -$
$4\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16} - 18\omega_{10}^2\omega_7^2 v_3^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}\omega_{16}^2 + 12\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 +$
$12\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 24\omega_{10}^2\omega_7^2 c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2 + 60\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 84\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 +$
$24\omega_{10}^2\omega_7^2 v_3^2\omega_{11}^2\omega_{19}^2\omega_{16} - 42\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 + 24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{16}^2 - 18\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 -$
$12\omega_{10}^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{19}^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 24\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 24\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 -$
$12\omega_{10}^2\omega_7^2 v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 - 66\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 - 24\omega_{10}^2\omega_7^2 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 - 24\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}\omega_{16} - 12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 -$
$24\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2 + 36\omega_{10}^2\omega_7\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 - 48\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{16}^2 + 72\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_{10}^2\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 -$
$24\omega_{10}^2\omega_7^3 v_3^2\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16} - 12\omega_{10}^2\omega_7^3 c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2 - \omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 - 24\omega_{10}^2\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{16}^2 -$
$12\omega_{10}\omega_7^3 v_3^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 - 66\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 12\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2\omega_{23}\omega_{19}^2\omega_{16}^2 + 18\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 +$
$12\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16} - 84\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 132\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 24\omega_{10}\omega_7^3 v_3^2\omega_{11}^2\omega_{19}\omega_{16} + 12\omega_{10}^2\omega_7 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 +$
$12\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 - 24\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}\omega_{16} + 12\omega_{10}^2\omega_7^3 v_3^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^3\omega_{23}\omega_{19}^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16} +$
$156\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 4\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}\omega_{16} + 24\omega_{10}^2\omega_7^2 c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 -$
$24\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 24\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 24\omega_{10}^2\omega_7^2 v_3^2\omega_{11}^2\omega_{19}\omega_{16}^2 + 24\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 - 18\omega_{10}^2\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 + 24\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}^2\omega_{16}$

$C_{60} = -36\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3 c_s^4\omega_{11}^2\omega_{19}^2 + 24\omega_{10}\omega_7\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 36\omega_7^3 v_3^2 c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19}\omega_{16} -$
$12\omega_{10}\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2 v_2^2 + 72\omega_{10}\omega_7 v_3^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + \omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_2^2\omega_{16} -$
$12\omega_{10}\omega_7^2 c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} - 102\omega_{10}\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 6\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 36\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}^2 v_2^2\omega_{16} + 6\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} -$

$$6\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 36\omega_{10}\omega_7^2v_3^2c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 18\omega_{10}\omega_7^3v_3^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} + 12\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 -$$
$$12\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2 - 12\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16} + 24\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2v_2^2\omega_{16} +$$
$$12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2v_2^2 - 6\omega_{10}\omega_7^3c_s^4\omega_{11}^2\omega_{19}\omega_{16} + 36\omega_{10}\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 6\omega_{10}\omega_7^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} - \omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} +$$
$$36\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2 + 54\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 60\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 6\omega_{10}\omega_7^3\omega_{23}\omega_{19}^2v_2^2\omega_{16} - 6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}^2v_2^2\omega_{16} +$$
$$6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 36\omega_{10}\omega_7^2v_3^2\omega_{11}^2\omega_{19}^2v_2^2 - 6\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16} + 18\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2\omega_{16} -$$
$$36\omega_{10}\omega_7^3v_3^2c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2 - 6\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} + 12\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2v_2^2 + 18\omega_{10}\omega_7^3v_3^2c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} -$$
$$18\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{19}^2v_2^2\omega_{16} - 72\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 24\omega_{10}\omega_7\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 15\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 36\omega_{10}\omega_7^2v_3^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} -$$
$$6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 6\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 36\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 12\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 48\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} +$$
$$12\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2 - 18\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}\omega_{16} + 6\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} + 12\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2v_2^2\omega_{16} + 12\omega_{10}\omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 +$$
$$18\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16} + 18\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 5\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 18\omega_7^3v_3^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 36\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$$
$$48\omega_{10}v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 24\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{16} + 30\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 5\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} -$$
$$9\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 12\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 9\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 24\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} -$$
$$36\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2 + 12\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}^2v_2^2 + 36\omega_{10}\omega_7^2v_3^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 36\omega_{10}\omega_7^2v_3^2c_s^2\omega_{11}^2\omega_{19}^2 -$$
$$12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2v_2^2 - 12\omega_{10}\omega_7^2\omega_{23}\omega_{19}^2v_2^2\omega_{16} - 18\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 144\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 6\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} -$$
$$36\omega_{10}\omega_7^3v_3^2\omega_{11}^2\omega_{19}^2v_2^2 + 12\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 27\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 12\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 72\omega_7^2v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} -$$
$$36\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2 - 18\omega_{10}\omega_7^3v_3^2c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 24\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 18\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^2v_2^2\omega_{16} +$$
$$6\omega_7^3\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} - 12\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2v_2^2 - 6\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 48\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 12\omega_7^3\omega_{11}^2\omega_{19}^2v_2^2 + 6\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}\omega_{16} +$$
$$6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2v_2^2\omega_{16} - 6\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2v_2^2\omega_{16} + 36\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 18\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_{10}\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} +$$
$$36\omega_7^3v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 24\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{16} - 108\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 6\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} + 6\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}\omega_{16} -$$
$$12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 36\omega_7^3v_3^2\omega_{11}^2\omega_{19}^2v_2^2 + 15\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 18\omega_7^3v_3^2c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 6\omega_{10}\omega_7^3c_s^4\omega_{11}^2\omega_{19}\omega_{16} - 12\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 +$$
$$12\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2v_2^2 + 60\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 15\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 24\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 18\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} +$$
$$36\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{19}^2v_2^2\omega_{16} + 12\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16} - 36\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 12\omega_{10}\omega_7^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 12\omega_{10}\omega_7^2c_s^4\omega_{11}^2\omega_{19}\omega_{16} +$$
$$18\omega_{10}\omega_7^3v_3^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} + 18\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 6\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 36\omega_{10}\omega_7^2v_3^2c_s^2\omega_{11}^2\omega_{19}^2 - 24\omega_7^2v_3^2\omega_{11}^2\omega_{19}^2 +$$
$$24\omega_7^2v_3^4\omega_{11}\omega_{19} + 432\omega_7v_3^2c_s^2\omega_{11}^2\omega_{19} + 48\omega_7c_s^4\omega_{11}^2\omega_{19} - 36\omega_7^2v_3^2\omega_{11}\omega_{19}^2 + 72\omega_7^2v_3^2c_s^2\omega_{11}^2 + 24\omega_7v_3^2\omega_{11}^2 - 126\omega_7^2v_3^2c_s^2\omega_{11}^2\omega_{19} - 96\omega_7v_3^2\omega_{11}^2\omega_{19} +$$
$$14\omega_7^2c_s^4\omega_{11}\omega_{19}^2 - 24\omega_7c_s^4\omega_{11}^2 - 36\omega_7^2v_3^4\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{11}^2 - 48v_3^2\omega_{11}\omega_{19}^2 + 12\omega_7^2v_3^4\omega_{11}^2 + 24c_s^4\omega_{11}\omega_{19}^2 + 24\omega_7c_s^4\omega_{19}^2 - 24\omega_7^2v_3^2\omega_{11}\omega_{19} -$$
$$72\omega_7v_3^2\omega_{19}^2 - 144\omega_7^2v_3^2c_s^2\omega_{19}^2 - 12\omega_7^2v_3^2c_s^2\omega_{11}^2\omega_{19}^2 + 36\omega_7^2v_3^4\omega_{11}\omega_{19}^2 - 48\omega_7c_s^2\omega_{11}^2\omega_{19} - 14\omega_7^2c_s^2\omega_{11}\omega_{19}^2 + 96\omega_7v_3^4\omega_{11}^2\omega_{19} + 216v_3^2c_s^2\omega_{11}\omega_{19}^2$$

$$C_{61} = -3\omega_7^2v_3^4\omega_{11}^2\omega_{19}^2 - 48\omega_7v_3^4\omega_{11}\omega_{19} - 24\omega_7v_3^4\omega_{11}^2 - 432\omega_7v_3^2c_s^2\omega_{11}\omega_{19}^2 + 24\omega_7c_s^2\omega_{11}^2 + \omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 48v_3^4\omega_{11}^2\omega_{19} + 24c_s^2\omega_{11}^2\omega_{19} + 36\omega_7^2v_3^2\omega_{19}^2 -$$
$$12\omega_7^2c_s^4\omega_{19}^2 - 144\omega_7v_3^2c_s^2\omega_{11}^2 + 30\omega_7^2v_3^2\omega_{11}^2\omega_{19} - 48\omega_7c_s^4\omega_{11}\omega_{19}^2 - 12\omega_7^2c_s^4\omega_{11}^2\omega_{19} + 150\omega_7^2v_3^2c_s^2\omega_{11}\omega_{19}^2 + 96\omega_7v_3^2\omega_{11}\omega_{19}^2 + 3\omega_7^2v_3^2\omega_{11}^2\omega_{19}^2 -$$
$$\omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 + 72\omega_7^2v_3^2c_s^2\omega_{11}\omega_{19} + 48\omega_7v_3^2\omega_{11}\omega_{19} + 288\omega_7v_3^2c_s^2\omega_{19}^2 + 48v_3^2\omega_{11}^2\omega_{19} - 24c_s^4\omega_{11}^2\omega_{19} - 216v_3^2c_s^2\omega_{11}^2\omega_{19} + 12\omega_7^2c_s^4\omega_{11}^2 - 12\omega_7^2v_3^2\omega_{11}^2 +$$
$$48\omega_7c_s^2\omega_{11}\omega_{19}^2 - 24\omega_7c_s^2\omega_{19}^2 + 72\omega_7v_3^4\omega_{19}^2 - 30\omega_7^2v_3^4\omega_{11}^2\omega_{19} - 96\omega_7v_3^4\omega_{11}\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{11}^2\omega_{19} - 144\omega_7v_3^2c_s^2\omega_{11}\omega_{19} + 48v_3^4\omega_{11}\omega_{19}^2 - 24c_s^2\omega_{11}\omega_{19}^2 +$$
$$24\omega_7^2v_3^4\omega_{11}\omega_{19} + 432\omega_7v_3^2c_s^2\omega_{11}^2\omega_{19} + 48\omega_7c_s^4\omega_{11}^2\omega_{19} - 36\omega_7^2v_3^2\omega_{11}\omega_{19}^2 + 72\omega_7^2v_3^2c_s^2\omega_{11}^2 + 24\omega_7v_3^2\omega_{11}^2 - 126\omega_7^2v_3^2c_s^2\omega_{11}^2\omega_{19} - 96\omega_7v_3^2\omega_{11}^2\omega_{19} +$$
$$14\omega_7^2c_s^4\omega_{11}\omega_{19}^2 - 24\omega_7c_s^4\omega_{11}^2 - 36\omega_7^2v_3^4\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{11}^2 - 48v_3^2\omega_{11}\omega_{19}^2 + 12\omega_7^2v_3^4\omega_{11}^2 + 24c_s^4\omega_{11}\omega_{19}^2 + 24\omega_7c_s^4\omega_{19}^2 - 24\omega_7^2v_3^2\omega_{11}\omega_{19} -$$
$$72\omega_7v_3^2\omega_{19}^2 - 144\omega_7^2v_3^2c_s^2\omega_{19}^2 - 12\omega_7^2v_3^2c_s^2\omega_{11}^2\omega_{19}^2 + 36\omega_7^2v_3^4\omega_{11}\omega_{19}^2 - 48\omega_7c_s^2\omega_{11}^2\omega_{19} - 14\omega_7^2c_s^2\omega_{11}\omega_{19}^2 + 96\omega_7v_3^4\omega_{11}^2\omega_{19} + 216v_3^2c_s^2\omega_{11}\omega_{19}^2$$

$$C_{62} = -24\omega_7c_s^2\omega_{19} - 48\omega_7v_3^4\omega_{19} + \omega_7^3c_s^2\omega_{19}^2 + 3\omega_7^3v_3^4\omega_{19}^2 + 12\omega_7^3v_3^2c_s^2 - 24\omega_7^2v_3^4 + 24\omega_7^2v_3^2\omega_{19}^2 + 24\omega_7^2c_s^4\omega_{19}^2 + 24c_s^4\omega_{19}^2 - 24\omega_7v_3^2c_s^2\omega_{19} +$$
$$12\omega_7^3v_3^4 + 156\omega_7v_3^2c_s^2\omega_{19}^2 - 72\omega_7^2v_3^2\omega_{19} - 24\omega_7^2c_s^4\omega_{19} + 12\omega_7c_s^2\omega_{19}^2 + 24\omega_7v_3^4\omega_{19}^2 - 6\omega_7^3c_s^2\omega_{19} - 18\omega_7^3v_3^4\omega_{19} - 12\omega_7^3v_3^2 + 24\omega_7c_s^4\omega_{19} +$$
$$48\omega_7v_3^2\omega_{19} + 48\omega_7^2v_3^2c_s^2\omega_{19} - 3\omega_7^3c_s^4\omega_{19}^2 - 3\omega_7^3v_3^2\omega_{19}^2 - 24\omega_7^2v_3^2c_s^2 - 96v_3^2c_s^2\omega_{19}^2 - 24\omega_7^2v_3^4\omega_{19}^2 + 6\omega_7^3v_3^2c_s^2\omega_{19}^2 - 8\omega_7^2c_s^2\omega_{19}^2 + 24\omega_7^2v_3^2 -$$
$$12\omega_7^3v_3^2c_s^2\omega_{19} + 72\omega_7^2v_3^4\omega_{19} + 24\omega_7^2c_s^2\omega_{19} - 48\omega_7c_s^4\omega_{19}^2 - 24\omega_7v_3^2\omega_{19}^2 - 72\omega_7^2v_3^2c_s^2\omega_{19}^2 + 6\omega_7^3c_s^4\omega_{19} + 18\omega_7^3v_3^2\omega_{19}$$

$$C_{63} = 72\omega_7\omega_{11}\omega_{19}^2 - 24\omega_7c_s^2\omega_{11}\omega_{19} - 48\omega_7c_s^2\omega_{11}^2 - 3\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 60c_s^2\omega_{11}^2\omega_{19} - 60\omega_7^2v_3^2\omega_{19}^2 + 2\omega_7^2\omega_{11}^2\omega_{19}^2 + 24\omega_7^2\omega_{19}^2 - 51\omega_7^2v_3^2\omega_{11}^2\omega_{19} -$$
$$168\omega_7v_3^2\omega_{11}\omega_{19}^2 - 5\omega_7^2v_3^2\omega_{11}^2\omega_{19}^2 - 72\omega_7v_3^2\omega_{11}\omega_{19} - 12\omega_7^2\omega_{11}^2 - 84v_3^2\omega_{11}^2\omega_{19} + 21\omega_7^2\omega_{11}^2\omega_{19} + 24\omega_7^2v_3^2\omega_{11}^2 + 36\omega_{11}^2\omega_{19} - 120\omega_7c_s^2\omega_{11}\omega_{19}^2 +$$
$$72\omega_7c_s^2\omega_{19}^2 + 24\omega_7\omega_{11}\omega_{19} - 33\omega_7^2c_s^2\omega_{11}^2\omega_{19} + 60c_s^2\omega_{11}\omega_{19}^2 - 72\omega_7\omega_{11}^2\omega_{19} + 12\omega_7^2c_s^2\omega_{11}\omega_{19} + 61\omega_7^2v_3^2\omega_{11}\omega_{19}^2 - 48\omega_7v_3^2\omega_{11}^2 + 168\omega_7v_3^2\omega_{11}^2\omega_{19} +$$
$$24\omega_7\omega_{11}^2 - 36\omega_7^2c_s^2\omega_{19}^2 - 12\omega_7^2\omega_{11}\omega_{19} + 24\omega_7^2c_s^2\omega_{11}^2 + 84v_3^2\omega_{11}\omega_{19}^2 - 48\omega_7\omega_{19}^2 - 25\omega_7^2\omega_{11}\omega_{19}^2 + 36\omega_7^2v_3^2\omega_{11}\omega_{19} + 120\omega_7v_3^2\omega_{19}^2 +$$
$$120\omega_7c_s^2\omega_{11}^2\omega_{19} + 39\omega_7^2c_s^2\omega_{11}\omega_{19}^2 - 36\omega_{11}\omega_{19}^2$$

2.2.5 Conservation of momentum: ρv_3

$$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{v_3\delta_l v_1}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l\rho v_1}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{v_3\delta_l v_2}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\delta_l\rho v_2}{\delta_t}\frac{\partial v_3}{\partial x_2} + (c_s^2+v_3^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} +$$
$$\frac{2v_3\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3}$$
$$+ (-2-3v_3^2\omega_{11}+4c_s^2+\omega_{11}+6v_3^2-2c_s^2\omega_{11})\frac{\delta_l^2}{\omega_{11}\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + (2-\omega_{11})\frac{3v_3\delta_l^2\rho}{\omega_{11}\delta_t}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_6)\frac{c_s^2\delta_l^2\rho}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} +$$
$$(-2+\omega_7)\frac{c_s^2\delta_l^2\rho}{2\omega_7\delta_t}\frac{\partial^2 v_3}{\partial x_2^2} + (-2+\omega_6)\frac{c_s^2\delta_l^2\rho}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + (-2+\omega_7)\frac{c_s^2\delta_l^2\rho}{2\omega_7\delta_t}\frac{\partial^2 v_2}{\partial x_2\partial x_3} +$$
$$(-2-v_3^2\omega_{11}+6c_s^2+\omega_{11}+2v_3^2-3c_s^2\omega_{11})\frac{v_3\delta_l^2}{2\omega_{11}\delta_t}\frac{\partial^2\rho}{\partial x_3^2} + (-2-3v_3^2\omega_{11}+2c_s^2+\omega_{11}+6v_3^2-c_s^2\omega_{11})\frac{\delta_l^2\rho}{2\omega_{11}\delta_t}\frac{\partial^2 v_3}{\partial x_3^2} +$$
$$C_1\frac{v_3\delta_l^3 v_1}{12\omega_{13}\omega_9\omega_6\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + C_2\frac{v_3\delta_l^3\rho}{12\omega_{13}\omega_9\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_3\frac{\delta_l^3\rho v_1}{6\omega_{13}\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1^3} +$$
$$(-6\omega_8\omega_6+6\omega_5\omega_6-6\omega_7\omega_5\omega_6-\omega_7\omega_8\omega_5\omega_6+6\omega_7\omega_5-6\omega_7\omega_8+6\omega_7\omega_8\omega_6)\frac{v_3c_s^2\delta_l^3\rho}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$(-\omega_8\omega_6-\omega_7\omega_6^2-\omega_7\omega_8+\omega_6^2+\omega_7\omega_6+\omega_7\omega_8\omega_6)\frac{c_s^2\delta_l^3\rho v_2}{\omega_7\omega_8\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_2} +$$
$$(-6\omega_8\omega_6+6\omega_5\omega_6-6\omega_7\omega_5\omega_6-\omega_7\omega_8\omega_5\omega_6+6\omega_7\omega_5-6\omega_7\omega_8+6\omega_7\omega_8\omega_6)\frac{v_3c_s^2\delta_l^3\rho}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} +$$

$$
\begin{aligned}
&(-\omega_8\omega_6 - \omega_7^2\omega_6 + \omega_7^2 - \omega_7\omega_8 + \omega_7\omega_6 + \omega_7\omega_8\omega_6)\frac{c_s^2\delta_l^3\rho v_1}{\omega_7^2\omega_8\omega_6\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2^2} + C_4\frac{v_3\delta_l^3 v_2}{12\omega_{10}\omega_7\delta_t\omega_{16}}\frac{\partial^3\rho}{\partial x_2^3} + C_5\frac{v_3\delta_l^3\rho}{12\omega_{10}\omega_7\delta_t\omega_{16}}\frac{\partial^3 v_2}{\partial x_2^3} + \\
&C_6\frac{\delta_l^3\rho v_2}{6\omega_7^2\delta_t\omega_{16}}\frac{\partial^3 v_3}{\partial x_2^3} + (-12 + 12\omega_6 - \omega_6^2)\frac{c_s^4\delta_l^3}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + (-2\omega_{13} + 2\omega_6 - \omega_6^2 + \omega_{13}\omega_6)\frac{c_s^2\delta_l^3\rho v_1}{\omega_{13}\omega_6^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} + \\
&(-\omega_{11}\omega_{18}\omega_6^2 + 12\omega_{11}\omega_{18}\omega_6 - 12\omega_{11}\omega_{18} - 12\omega_{11}\omega_6^2 + 12\omega_{11}\omega_6 + 12\omega_6^2 - 12\omega_{18}\omega_6)\frac{v_3 c_s^2\delta_l^3\rho}{6\omega_{11}\omega_{18}\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + \\
&(-\omega_8\omega_6 - \omega_7\omega_6^2 - \omega_7\omega_8 + \omega_6^2 + \omega_7\omega_6 + \omega_7\omega_8\omega_6)\frac{c_s^2\delta_l^3\rho v_2}{\omega_7\omega_8\omega_6^2\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} + \\
&(-\omega_8\omega_6 - \omega_7^2\omega_6 + \omega_7^2 - \omega_7\omega_8 + \omega_7\omega_6 + \omega_7\omega_8\omega_6)\frac{c_s^2\delta_l^3\rho v_1}{\omega_7^2\omega_8\omega_6\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + (-12 + 12\omega_7 - \omega_7^2)\frac{c_s^4\delta_l^3}{6\omega_7^2\delta_t}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + \\
&(2\omega_7 - \omega_7^2 + \omega_7\omega_{16} - 2\omega_{16})\frac{c_s^2\delta_l^3\rho v_2}{\omega_7^2\delta_t\omega_{16}}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3} + \\
&(-12\omega_7^2\omega_{11} + 12\omega_7^2 + 12\omega_7\omega_{11}\omega_{19} - 12\omega_{11}\omega_{19} - 12\omega_7\omega_{19} - \omega_7^2\omega_{11}\omega_{19} + 12\omega_7\omega_{11})\frac{v_3 c_s^2\delta_l^3\rho}{6\omega_7^2\omega_{11}\omega_{19}\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + \\
&C_7\frac{v_3\delta_l^3 v_1}{\omega_{11}^2\omega_{18}\omega_6\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} + C_8\frac{v_3\delta_l^3\rho}{12\omega_{11}^2\omega_{18}\omega_6^2\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C_9\frac{\delta_l^3\rho v_1}{\omega_{11}^2\omega_{18}\omega_6\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + C_{10}\frac{v_3\delta_l^3 v_2}{\omega_7\omega_{11}^2\omega_{19}\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} + \\
&C_{11}\frac{v_3\delta_l^3\rho}{12\omega_7^2\omega_{11}^2\omega_{19}\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C_{12}\frac{\delta_l^3\rho v_2}{\omega_7\omega_{11}^2\omega_{19}\delta_t}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + C_{13}\frac{\delta_l^3}{12\omega_{11}^2\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + \\
&(-24 - 60v_3^2\omega_{11} + 36c_s^2 + 24\omega_{11} + 11v_3^2\omega_{11}^2 + 60v_3^2 - 36c_s^2\omega_{11} + 5c_s^2\omega_{11}^2 - 4\omega_{11}^2)\frac{v_3\delta_l^3\rho}{6\omega_{11}^2\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + C_{14}\frac{v_3\delta_l^4}{24\omega_{13}^2\omega_9^2\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + \\
&C_{15}\frac{v_3\delta_l^4\rho v_1}{12\omega_{13}^2\omega_9^2\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_{16}\frac{\delta_l^4\rho}{24\omega_{13}^2\omega_6^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^4} + C_{17}\frac{v_3\delta_l^4 v_2 v_1}{4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + \\
&C_{18}\frac{v_3\delta_l^4\rho v_2}{4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{19}\frac{v_3\delta_l^4\rho v_1}{12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{20}\frac{\delta_l^4\rho v_2 v_1}{2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_6^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_2} + \\
&C_{21}\frac{v_3 c_s^4\delta_l^4}{6\omega_7^2\omega_8^2\omega_5^2\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{22}\frac{v_3 c_s^2\delta_l^4\rho v_1}{2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{23}\frac{v_3 c_s^2\delta_l^4\rho v_2}{2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\delta_t\omega_{16}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + \\
&C_{24}\frac{c_s^2\delta_l^4\rho}{2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_6^3\delta_t\omega_{16}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} + C_{25}\frac{v_3\delta_l^4 v_2 v_1}{4\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\delta_t\omega_{16}^2}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + C_{26}\frac{v_3\delta_l^4\rho v_2}{12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\delta_t\omega_{16}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + \\
&C_{27}\frac{v_3\delta_l^4\rho v_1}{4\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\delta_t\omega_{16}^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{28}\frac{\delta_l^4\rho v_2 v_1}{2\omega_7^3\omega_{17}\omega_8^2\omega_6^2\delta_t\omega_{16}^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2^3} + C_{29}\frac{v_3\delta_l^4}{24\omega_{10}^2\omega_7^2\delta_t\omega_{16}^2}\frac{\partial^4\rho}{\partial x_2^4} + C_{30}\frac{v_3\delta_l^4\rho v_2}{12\omega_{10}^2\omega_7^2\delta_t\omega_{16}^2}\frac{\partial^4 v_2}{\partial x_2^4} + \\
&C_{31}\frac{\delta_l^4\rho}{24\omega_7^3\delta_t\omega_{16}^2}\frac{\partial^4 v_3}{\partial x_2^4} + C_{32}\frac{\delta_l^4 v_1}{12\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{33}\frac{\delta_l^4\rho}{12\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + \\
&C_{34}\frac{v_3\delta_l^4\rho v_1}{12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_{35}\frac{\delta_l^4}{2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{36}\frac{\delta_l^4\rho}{2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{37}\frac{\delta_l^4\rho}{12\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{38}\frac{v_3\delta_l^4\rho}{2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{39}\frac{\delta_l^4}{2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\delta_t\omega_{16}}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{40}\frac{\delta_l^4\rho}{12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}\delta_t\omega_{16}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{41}\frac{\delta_l^4\rho v_2}{\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\delta_t\omega_{16}^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{42}\frac{\delta_l^4\rho}{2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2\delta_t\omega_{16}}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{43}\frac{\delta_l^4 v_2}{12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}\delta_t\omega_{16}^2}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + \\
&C_{44}\frac{\delta_l^4\rho}{12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}\delta_t\omega_{16}^2}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{45}\frac{v_3\delta_l^4\rho v_2}{12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\delta_t\omega_{16}^2}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_{46}\frac{v_3\delta_l^4}{12\omega_{13}\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + \\
&C_{47}\frac{v_3\delta_l^4\rho v_1}{2\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{48}\frac{\delta_l^4\rho}{12\omega_{13}\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{49}\frac{v_3\delta_l^4 v_2 v_1}{\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{50}\frac{v_3\delta_l^4\rho v_2}{2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{51}\frac{v_3\delta_l^4\rho v_1}{2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{52}\frac{\delta_l^4\rho v_2 v_1}{\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{53}\frac{v_3\delta_l^4}{12\omega_7^3\omega_{23}\omega_{11}^3\omega_{19}^2\delta_t\omega_{16}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{54}\frac{v_3\delta_l^4\rho v_2}{2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3\omega_{19}^2\delta_t\omega_{16}^2}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + \\
&C_{55}\frac{\delta_l^4\rho}{12\omega_7^3\omega_{23}\omega_{11}^3\omega_{19}^2\delta_t\omega_{16}}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{56}\frac{\delta_l^4 v_1}{4\omega_{11}^3\omega_{18}^2\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{57}\frac{\delta_l^4\rho}{12\omega_{11}^3\omega_{18}^2\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{58}\frac{v_3\delta_l^4\rho v_1}{4\omega_{11}^3\omega_{18}^2\omega_6^2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + \\
&C_{59}\frac{\delta_l^4 v_2}{4\omega_7^2\omega_{11}^3\omega_{19}^2\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{60}\frac{\delta_l^4\rho}{12\omega_7^3\omega_{11}^3\omega_{19}^2\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{61}\frac{v_3\delta_l^4\rho v_2}{4\omega_7^2\omega_{11}^3\omega_{19}^2\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{62}\frac{v_3\delta_l^4}{12\omega_{11}^3\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{63}\frac{\delta_l^4\rho}{12\omega_{11}^3\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} \\
&= 0,
\end{aligned}
$$

where:

$$
C_1 = -18\omega_{13}c_s^2\omega_6 - 6\omega_{13}\omega_6 v_1^2 - 12\omega_{13} + 18c_s^2\omega_9\omega_6 + 6\omega_9\omega_6 v_1^2 + 3\omega_{13}c_s^2\omega_9\omega_6 + \omega_{13}\omega_9\omega_6 v_1^2 - 6\omega_9\omega_6 - 36c_s^2\omega_9 - 12\omega_9 v_1^2 + 36\omega_{13}c_s^2 + 12\omega_9 + 12\omega_{13}v_1^2 + 6\omega_{13}\omega_6 - \omega_{13}\omega_9\omega_6
$$

$$
C_2 = -6\omega_{13}c_s^2\omega_6 - 18\omega_{13}\omega_6 v_1^2 - 12\omega_{13} + 6c_s^2\omega_9\omega_6 + 18\omega_9\omega_6 v_1^2 + \omega_{13}c_s^2\omega_9\omega_6 + 3\omega_{13}\omega_9\omega_6 v_1^2 - 6\omega_9\omega_6 - 12c_s^2\omega_9 - 36\omega_9 v_1^2 + 12\omega_{13}c_s^2 + 12\omega_9 + 36\omega_{13}v_1^2 + 6\omega_{13}\omega_6 - \omega_{13}\omega_9\omega_6
$$

$$
C_3 = 15\omega_{13}c_s^2\omega_6 + 3\omega_{13}\omega_6 v_1^2 + 3\omega_6^2 v_1^2 - 12\omega_{13}c_s^2 - 3\omega_{13}c_s^2\omega_6^2 + \omega_{13}\omega_6^2 - 6\omega_6 v_1^2 - 6c_s^2\omega_6 + 3c_s^2\omega_6^2 + 6\omega_6 - 3\omega_6^2 - 3\omega_{13}\omega_6 - \omega_{13}\omega_6^2 v_1^2
$$

$C_4 = -36\omega_{10}c_s^2 + 12\omega_{10} - 6\omega_{10}\omega_7 - 18\omega_7 c_s^2\omega_{16} + 3\omega_{10}\omega_7 c_s^2\omega_{16} - 6\omega_7 v_2^2\omega_{16} + \omega_{10}\omega_7 v_2^2\omega_{16} + 18\omega_{10}\omega_7 c_s^2 + 6\omega_7\omega_{16} - \omega_{10}\omega_7\omega_{16} - 12\omega_{10}v_2^2 + 12v_2^2\omega_{16} + 6\omega_{10}\omega_7 v_2^2 + 36c_s^2\omega_{16} - 12\omega_{16}$

$C_5 = -12\omega_{10}c_s^2 + 12\omega_{10} - 6\omega_{10}\omega_7 - 6\omega_7 c_s^2\omega_{16} + \omega_{10}\omega_7 c_s^2\omega_{16} - 18\omega_7 v_2^2\omega_{16} + 3\omega_{10}\omega_7 v_2^2\omega_{16} + 6\omega_{10}\omega_7 c_s^2 + 6\omega_7\omega_{16} - \omega_{10}\omega_7\omega_{16} - 36\omega_{10}v_2^2 + 36v_2^2\omega_{16} + 18\omega_{10}\omega_7 v_2^2 + 12c_s^2\omega_{16} - 12\omega_{16}$

$C_6 = 6\omega_7 + 3\omega_7^2 v_2^2 + 15\omega_7 c_s^2\omega_{16} + 3\omega_7 v_2^2\omega_{16} - 3\omega_7^2 + \omega_7^2\omega_{16} - 6\omega_7 c_s^2 - \omega_7^2 v_2^2\omega_{16} - 3\omega_7\omega_{16} + 3\omega_7^2 c_s^2 - 6\omega_7 v_2^2 - 12c_s^2\omega_{16} - 3\omega_7^2 c_s^2\omega_{16}$

$C_7 = v_3^2\omega_{11}^2\omega_6 - v_3^2\omega_{11}\omega_{18}\omega_6 + 3c_s^2\omega_{11}\omega_{18} - \omega_{11}^2\omega_6 + v_3^2\omega_{11}\omega_{18} - v_3^2\omega_{11}^2 + 3c_s^2\omega_{11}^2\omega_6 + \omega_{11}\omega_{18}\omega_6 - \omega_{11}\omega_{18} + 3c_s^2\omega_{18}\omega_6 - 3c_s^2\omega_{11}\omega_{18}\omega_6 - 3c_s^2\omega_{11}\omega_6 + \omega_{11}\omega_6 + v_3^2\omega_{18}\omega_6 - 3c_s^2\omega_{11}^2 - \omega_{18}\omega_6 - v_3^2\omega_{11}\omega_6 + \omega_{11}^2$

$C_8 = -12v_3^2\omega_{11}^2\omega_6 + 6\omega_{11}\omega_{18}\omega_6^2 + 12\omega_{11}^2\omega_6 + 12c_s^2\omega_{11}^2\omega_6^2 - 11c_s^2\omega_{11}^2\omega_{18}\omega_6^2 + 42c_s^2\omega_{11}^2\omega_{18}\omega_6 - 12\omega_{11}^2\omega_6^2 - 12c_s^2\omega_{11}^2\omega_6 + 12v_3^2\omega_{11}^2\omega_6^2 - 6v_3^2\omega_{11}\omega_{18}\omega_6^2 - 12\omega_{18}\omega_6^2 - 24c_s^2\omega_{11}\omega_{18}\omega_6 - 12v_3^2\omega_{11}\omega_6^2 - 3v_3^2\omega_{11}^2\omega_{18}\omega_6^2 - 6\omega_{11}^2\omega_{18}\omega_6 + 12\omega_{11}\omega_6^2 + 12v_3^2\omega_{18}\omega_6^2 - 12c_s^2\omega_{11}\omega_6^2 + 6v_3^2\omega_{11}^2\omega_{18}\omega_6 + 3\omega_{11}^2\omega_{18}\omega_6^2 + 36c_s^2\omega_{18}\omega_6^2 - 18c_s^2\omega_{11}\omega_{18}\omega_6^2 - 24c_s^2\omega_{11}^2\omega_{18}$

$C_9 = 3v_3^2\omega_{11}^2\omega_6 - 3v_3^2\omega_{11}\omega_{18}\omega_6 + c_s^2\omega_{11}\omega_{18} - \omega_{11}^2\omega_6 + 3v_3^2\omega_{11}\omega_{18} - 3v_3^2\omega_{11}^2 + c_s^2\omega_{11}^2\omega_6 + \omega_{11}\omega_{18}\omega_6 - \omega_{11}\omega_{18} + c_s^2\omega_{18}\omega_6 - c_s^2\omega_{11}\omega_{18}\omega_6 - c_s^2\omega_{11}\omega_6 + \omega_{11}\omega_6 + 3v_3^2\omega_{18}\omega_6 - c_s^2\omega_{11}^2 - \omega_{18}\omega_6 - 3v_3^2\omega_{11}\omega_6 + \omega_{11}^2$

$C_{10} = 3\omega_7 c_s^2\omega_{19} - 3\omega_7 c_s^2\omega_{11}\omega_{19} + 3\omega_7 c_s^2\omega_{11}^2 - \omega_7 v_3^2\omega_{11}\omega_{19} - v_3^2\omega_{11}^2 + \omega_7\omega_{11}\omega_{19} - 3\omega_7 c_s^2\omega_{11} - \omega_{11}\omega_{19} + \omega_7 v_3^2\omega_{19} + \omega_7 v_3^2\omega_{11}^2 + v_3^2\omega_{11}\omega_{19} - \omega_7\omega_{11}^2 - \omega_7\omega_{19} + \omega_7\omega_{11} - \omega_7 v_3^2\omega_{11} - 3c_s^2\omega_{11}^2 + \omega_{11}^2 + 3c_s^2\omega_{11}\omega_{19}$

$C_{11} = -24\omega_7 c_s^2\omega_{11}\omega_{19} - 12\omega_7 c_s^2\omega_{11}^2 - 12\omega_7^2 v_3^2\omega_{11} - 24c_s^2\omega_{11}^2\omega_{19} + 12\omega_7^2\omega_{11} - 3\omega_7^2 v_3^2\omega_{11}^2\omega_{19} - 12\omega_7^2\omega_{11}^2 + 3\omega_7^2\omega_{11}^2\omega_{19} - 12\omega_7^2\omega_{19} + 12\omega_7^2 v_3^2\omega_{11}^2 + 12\omega_7^2 v_3^2\omega_{19} - 11\omega_7^2 c_s^2\omega_{11}^2\omega_{19} - 6\omega_7\omega_{11}^2\omega_{19} - 18\omega_7^2 c_s^2\omega_{11}\omega_{19} - 12\omega_7 v_3^2\omega_{11}^2 + 6\omega_7 v_3^2\omega_{11}^2\omega_{19} - 12\omega_7^2 c_s^2\omega_{11} + 12\omega_7\omega_{11}^2 + 6\omega_7^2\omega_{11}\omega_{19} + 12\omega_7^2 c_s^2\omega_{11}^2 + 36\omega_7^2 c_s^2\omega_{19} - 6\omega_7^2 v_3^2\omega_{11}\omega_{19} + 42\omega_7 c_s^2\omega_{11}^2\omega_{19}$

$C_{12} = \omega_7 c_s^2\omega_{19} - \omega_7 c_s^2\omega_{11}\omega_{19} + \omega_7 c_s^2\omega_{11}^2 - 3\omega_7 v_3^2\omega_{11}\omega_{19} - 3v_3^2\omega_{11}^2 + \omega_7\omega_{11}\omega_{19} - \omega_7 c_s^2\omega_{11} - \omega_{11}\omega_{19} + 3\omega_7 v_3^2\omega_{19} + 3\omega_7 v_3^2\omega_{11}^2 + 3v_3^2\omega_{11}\omega_{19} - \omega_7\omega_{11}^2 - \omega_7\omega_{19} + \omega_7\omega_{11} - 3\omega_7 v_3^2\omega_{11} - c_s^2\omega_{11}^2 + \omega_{11}^2 + c_s^2\omega_{11}\omega_{19}$

$C_{13} =$
$-12c_s^4\omega_{11} + 36v_3^2\omega_{11} - 12c_s^2 + c_s^4\omega_{11}^2 - 7v_3^2\omega_{11}^2 - 36v_3^2 + 12c_s^2\omega_{11} - 36v_3^4\omega_{11} + 144v_3^2c_s^2 + 36v_3^4 - 144v_3^2c_s^2\omega_{11} + 24v_3^2c_s^2\omega_{11}^2 + 12c_s^4 - c_s^2\omega_{11}^2 + 7v_3^4\omega_{11}^2$

$C_{14} = -432\omega_{13}^2c_s^2\omega_9\omega_6v_1^2 - \omega_{13}^2c_s^4\omega_9^2\omega_6^2 - 96\omega_{13}^2\omega_9\omega_6v_1^4 + 48\omega_{13}\omega_9^2v_1^2 + 72\omega_{13}^2\omega_6v_1^4 - 12\omega_9^2\omega_6^2v_1^2 - 144c_s^2\omega_9^2\omega_6v_1^2 - 126\omega_{13}c_s^2\omega_9^2\omega_6^2v_1^2 - 12\omega_{13}^2c_s^4\omega_6^2 + 36\omega_{13}^2\omega_6^2v_1^2 - 3\omega_{13}^2\omega_9^2\omega_6^2v_1^4 + 288\omega_{13}^2c_s^2\omega_6v_1^2 - 24\omega_{13}c_s^4\omega_9^2 - 24\omega_9^2\omega_6v_1^4 - 12\omega_{13}^2c_s^2\omega_9^2\omega_6^2v_1^2 - 24\omega_{13}^2c_s^2\omega_9 - 144\omega_{13}c_s^2\omega_9\omega_6v_1^2 - 36\omega_{13}^2\omega_9\omega_6^2v_1^2 - 48\omega_{13}^2\omega_9v_1^2 + 48\omega_{13}\omega_9\omega_6v_1^2 + \omega_{13}^2c_s^2\omega_9^2\omega_6^2 + 96\omega_{13}\omega_9^2\omega_6v_1^4 + 30\omega_{13}\omega_9^2\omega_6^2v_1^2 + 24\omega_{13}^2c_s^4\omega_6 + 24\omega_{13}\omega_9\omega_6^2v_1^4 + 24\omega_{13}c_s^2\omega_9^2 - 96\omega_{13}\omega_9^2\omega_6v_1^2 - 12\omega_{13}c_s^4\omega_9^2\omega_6^2 + 24\omega_{13}^2c_s^4\omega_9 - 48\omega_{13}\omega_9\omega_6v_1^4 - 24c_s^4\omega_9^2\omega_6 - 48\omega_{13}^2c_s^4\omega_9\omega_6 - 24\omega_{13}\omega_9\omega_6^2v_1^2 - 12c_s^2\omega_9^2\omega_6^2 - 48\omega_{13}c_s^2\omega_9^2\omega_6 - 14\omega_{13}^2c_s^2\omega_9\omega_6^2 - 216\omega_{13}c_s^2\omega_9^2v_1^2 - 30\omega_{13}\omega_9^2\omega_6^2v_1^4 + 12\omega_{13}^2c_s^2\omega_6^2 - 72\omega_{13}^2\omega_6v_1^2 - 48\omega_{13}\omega_9^2v_1^4 + 12\omega_9^2\omega_6^2v_1^4 - 24\omega_{13}^2c_s^2\omega_6 - 144\omega_{13}^2c_s^2\omega_6^2v_1^2 + 72\omega_{13}c_s^2\omega_9\omega_6^2v_1^2 + 216\omega_{13}^2c_s^2\omega_9v_1^2 + 12\omega_{13}c_s^2\omega_9^2\omega_6^2 + 24c_s^2\omega_9^2\omega_6 + 48\omega_{13}^2c_s^2\omega_9\omega_6 + 96\omega_{13}^2\omega_9\omega_6v_1^2 + 12c_s^4\omega_9^2\omega_6^2 + 48\omega_{13}c_s^4\omega_9^2\omega_6 + 150\omega_{13}^2c_s^2\omega_9\omega_6^2v_1^2 + 48\omega_{13}^2\omega_9v_1^4 + 36\omega_{13}^2\omega_9\omega_6^2v_1^4 + 14\omega_{13}^2c_s^4\omega_9\omega_6^2 + 3\omega_{13}^2\omega_9^2\omega_6^2v_1^2 - 36\omega_{13}^2\omega_6^2v_1^4 + 432\omega_{13}c_s^2\omega_9^2\omega_6v_1^2 + 24\omega_9^2\omega_6v_1^2 + 72c_s^2\omega_9^2\omega_6^2v_1^2$

$C_{15} = -84\omega_{13}\omega_9^2v_1^2 + 24\omega_9^2\omega_6^2v_1^2 - 72\omega_{13}\omega_9^2\omega_6 - 60\omega_{13}^2\omega_6^2v_1^2 + 12\omega_{13}c_s^2\omega_9\omega_6^2 + 60\omega_{13}^2c_s^2\omega_9 + 72\omega_{13}^2\omega_9\omega_6 - 48\omega_{13}^2\omega_6 + 61\omega_{13}^2\omega_9\omega_6^2v_1^2 + 84\omega_{13}^2\omega_9v_1^2 - 24\omega_{13}c_s^2\omega_9\omega_6 - 72\omega_{13}\omega_9\omega_6v_1^2 - 25\omega_{13}^2\omega_9\omega_6^2 + 24\omega_{13}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_9^2\omega_6^2 + 36\omega_{13}\omega_9^2 - 51\omega_{13}\omega_9^2\omega_6^2v_1^2 + 21\omega_{13}\omega_9^2\omega_6^2 - 12\omega_{13}\omega_9\omega_6^2 - 60\omega_{13}c_s^2\omega_9^2 + 168\omega_{13}\omega_9^2\omega_6v_1^2 + 2\omega_{13}^2\omega_9^2\omega_6^2 + 36\omega_{13}\omega_9^2\omega_6^2v_1^2 + 24\omega_9^2\omega_6 + 24c_s^2\omega_9^2\omega_6^2 + 120\omega_{13}c_s^2\omega_9^2\omega_6 + 39\omega_{13}^2c_s^2\omega_9\omega_6^2 - 36\omega_{13}^2c_s^2\omega_6^2 - 36\omega_{13}^2\omega_9 + 120\omega_{13}^2\omega_6v_1^2 + 72\omega_{13}^2c_s^2\omega_6 - 33\omega_{13}c_s^2\omega_9^2\omega_6^2 - 12\omega_9^2\omega_6^2 - 48c_s^2\omega_9^2\omega_6 - 120\omega_{13}^2c_s^2\omega_9\omega_6 - 168\omega_{13}^2\omega_9\omega_6v_1^2 - 5\omega_{13}^2\omega_9^2\omega_6^2v_1^2 + 24\omega_{13}\omega_9\omega_6 - 48\omega_9^2\omega_6v_1^2$

$C_{16} = -24\omega_{13}c_s^2\omega_6 + 48\omega_{13}\omega_6v_1^2 - 12\omega_{13}c_s^2\omega_6^3v_1^2 - 12\omega_6^3v_1^2 + 24\omega_{13}^2\omega_6v_1^4 + 24\omega_{13}^2c_s^4\omega_6^2 + 24\omega_{13}^2\omega_6^2v_1^2 - 24c_s^2\omega_6^2v_1^2 + 156\omega_{13}^2c_s^2\omega_6v_1^2 - 3\omega_{13}^2c_s^4\omega_6^3 + 72\omega_{13}\omega_6^2v_1^4 + 24\omega_6^2v_1^2 + 48\omega_{13}c_s^2\omega_6^2v_1^2 - 6\omega_{13}c_s^2\omega_6^3 - 18\omega_{13}\omega_6^3v_1^4 + 24\omega_{13}^2c_s^4 - 48\omega_{13}^2c_s^4\omega_6 + 24\omega_{13}c_s^2\omega_6^2 - 3\omega_{13}^2\omega_6^3v_1^2 + 12c_s^2\omega_6^3v_1^2 - 24\omega_6^2v_1^4 + \omega_{13}^2c_s^2\omega_6^3 + 6\omega_{13}^2c_s^2\omega_6^3v_1^2 + 24\omega_{13}c_s^4\omega_6 + 3\omega_{13}^2\omega_6^3v_1^4 - 24\omega_{13}c_s^2\omega_6v_1^2 + 18\omega_{13}\omega_6^3v_1^2 - 8\omega_{13}^2c_s^2\omega_6^2 - 96\omega_{13}^2c_s^2v_1^2 - 24\omega_{13}^2\omega_6v_1^2 + 12\omega_{13}^2c_s^2\omega_6 - 72\omega_{13}^2c_s^2\omega_6^2v_1^2 - 24\omega_{13}c_s^4\omega_6^2 - 48\omega_{13}\omega_6v_1^4 + 12\omega_6^3v_1^4 - 72\omega_{13}\omega_6^2v_1^2 - 24\omega_{13}^2\omega_6^2v_1^4 + 6\omega_{13}c_s^4\omega_6^3$

$C_{17} = -4\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7c_s^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2\omega_6^2 - 6\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}^2c_s^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6v_1^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_6 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2v_1^2 + 2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2v_1^2 + 2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_1^2 - 24\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_6^2 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9^2\omega_6^2 - 12\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2v_1^2 + 4\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2v_1^2 - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2v_1^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 - 2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2v_1^2 - 2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2v_1^2 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2v_1^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 - 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6v_1^2 + 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 6\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2v_1^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_6v_1^2 + 6\omega_{13}^2\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6v_1^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2\omega_6^2v_1^2 + 2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2v_1^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_6^2v_1^2 - 3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2v_1^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2v_1^2 + 8\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 - 6\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}v_1^2 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2v_1^2 - 3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 + 24\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 9\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 +$

$4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 8\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 v_1^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 -$
$12\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} v_1^2 - 12\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 -$
$8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 6\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 - 4\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 - 6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2 +$
$4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 v_1^2 - 4\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 v_1^2$

$C_{18} = -4\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7 c_s^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2\omega_6^2 - 2\omega_{13}\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 +$
$4\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}^2 c_s^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6 v_1^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_6 - 12\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 v_1^2 +$
$6\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 + 2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 v_1^2 -$
$8\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_6^2 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9^2\omega_6^2 - 4\omega_{13} c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 -$
$6\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 + 12\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 v_1^2 - 4\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_9^2\omega_6^2 - 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6 +$
$9\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 v_1^2 - 12\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 v_1^2 + 2\omega_{13} c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2\omega_6 v_1^2 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$
$4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6 v_1^2 + 12\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 v_1^2 - 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_6 +$
$3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9^2\omega_6 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_6^2 + 12\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 v_1^2 + 4\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 +$
$24\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 v_1^2 - 4\omega_{13}^2 c_s^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6 + 6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 +$
$4\omega_{13}^2\omega_7 c_s^2\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2\omega_6 - 6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 v_1^2 + 4\omega_{13}\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_6^2 v_1^2 +$
$4\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_6^2 + 3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 - 2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 -$
$6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 + 6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 v_1^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 - 12\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 v_1^2 + 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 -$
$4\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 v_1^2 - 12\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_6 v_1^2 + 2\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 -$
$4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 v_1^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2\omega_6^2 v_1^2 + 6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 -$
$4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_6^2 v_1^2 - 9\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 v_1^2 +$
$12\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 v_1^2 + 8\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 -$
$2\omega_{13}^2 c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} v_1^2 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 - 6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2 v_1^2 - 3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 +$
$2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 + 8\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 +$
$4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 24\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 v_1^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 -$
$4\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} v_1^2 - 4\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 -$
$8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 - 12\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 - 2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2 +$
$4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 v_1^2 - 12\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 v_1^2$

$C_{19} = -12\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 v_1^2 + 24\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6^2 +$
$12\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 v_1^2 + 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6 - 42\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 v_1^2 - 54\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 -$
$6\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 36\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6 + 6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 v_1^2 - 18\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 v_1^2 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$12\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 + 12\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2 v_1^2 +$
$12\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6 + 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6 + 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 v_1^2 + 12\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 -$
$6\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 36\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6 v_1^2 - 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 +$
$54\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6 v_1^2 - 3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 v_1^2 + 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 v_1^2 +$
$12\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 v_1^2 - 12\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 9\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 - 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 -$
$6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2 - 12\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 - 12\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 v_1^2 +$
$6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 v_1^2 + \omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 v_1^2 + 12\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - \omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 -$
$18\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 24\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 - 6\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 -$
$24\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 + 6\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 - 12\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 v_1^2 -$
$12\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 v_1^2 - 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 + 6\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 v_1^2 - 9\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} v_1^2 -$
$12\omega_{13}^2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 - 18\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 - 24\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6 + 6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 -$
$6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 v_1^2 + 12\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 + 30\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 +$
$12\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 - 12\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 - 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 v_1^2 + 12\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}\omega_6 +$
$42\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 36\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 4\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 18\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 +$
$24\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 3\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 18\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 v_1^2 - 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6 v_1^2 +$
$6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 v_1^2 + 9\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 + 6\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2 + 12\omega_{13}^2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6 +$
$6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 v_1^2 - 12\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6 - 12\omega_{13}^2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 24\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}\omega_6^2 -$
$9\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 v_1^2 + 6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 36\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 + 18\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 -$
$12\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 - 36\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} v_1^2 - 12\omega_{13}^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 -$
$12\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 v_1^2 - 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 v_1^2 - 6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 54\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6 +$
$6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 v_1^2 + 54\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6 v_1^2 + 6\omega_{13}^2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 -$
$12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2 + 3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 24\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 4\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 v_1^2$

$C_{20} = 2\omega_{13}^2\omega_7 c_s^2\omega_8\omega_6^3 + \omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_6^2 - 8\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_6^2 + 5\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8\omega_6^3 + 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6^2 v_1^2 + 2\omega_{13}\omega_7^2\omega_8^2\omega_6^2 v_1^2 -$
$\omega_7^2\omega_{14}\omega_8^2\omega_6^3 - 7\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_6^3 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_6^2 v_1^2 + 2\omega_{13}^2\omega_7\omega_8\omega_6^3 v_1^2 - 2\omega_{13}^2\omega_7^2\omega_8^2\omega_6^2 v_1^2 - \omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_6^3 + 2\omega_7^2\omega_{14}\omega_8^2\omega_6^2 -$
$11\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8\omega_6^2 - \omega_{13}\omega_7^2\omega_8^2\omega_6^3 v_1^2 + \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_6^2 v_1^2 - 2\omega_{13}^2\omega_7\omega_8\omega_6^3 - \omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6^3 v_1^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_6^2 + 6\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8\omega_6 -$
$\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_6^3 + 2\omega_{13}^2\omega_7^2\omega_8^2\omega_6^2 - 2\omega_{13}^2\omega_7^2 c_s^2\omega_8^2\omega_6^2 + \omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_6^3 + 2\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_6^2 + 2\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_6^2 - \omega_{13}^2\omega_7^2\omega_8^2\omega_6^3 - 2\omega_{13}^2 c_s^2\omega_{14}\omega_8^2\omega_6^2 -$
$\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_6^3 + \omega_{13}^2\omega_7^2\omega_8^2\omega_6^3 v_1^2 - \omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_6^2 v_1^2 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_6^2 - 2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_6^2 + \omega_{13}\omega_7\omega_{14}\omega_8^2\omega_6^3 v_1^2 - 2\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_6^3 +$
$\omega_{13}^2\omega_7^2 c_s^2\omega_8^2\omega_6^3 + 2\omega_{13}^2\omega_7^2\omega_8\omega_6^3 + \omega_7^2\omega_{14}\omega_8^2\omega_6^3 v_1^2 - 2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_6^2 + \omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_6 v_1^2 - \omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_6^3 - \omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_6 -$
$6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_6 - 2\omega_{13}^2\omega_7^2 c_s^2\omega_8\omega_6^3 + 2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6 + \omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_6^3 + 2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_6^3 - 2\omega_{13}^2\omega_7^2\omega_8\omega_6^2 + 13\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_6 +$
$\omega_{13}^2\omega_7\omega_8^2\omega_6^3 + \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_6^3 + 2\omega_{13}^2\omega_7^2 c_s^2\omega_8\omega_6^2 - \omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_6^2 v_1^2 + 4\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_6^2 - 2\omega_{13}^2\omega_7^2\omega_8\omega_6^3 v_1^2 - 2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_6 -$
$\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_6^3 v_1^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6^2 - 2\omega_{13}\omega_7^2\omega_8^2\omega_6^2 - 2\omega_7^2\omega_{14}\omega_8^2\omega_6^2 v_1^2 - 5\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_6^2 + \omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_6^2 + \omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_6^3 v_1^2 +$
$2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_6^3 + 2\omega_{13}^2\omega_7^2\omega_8\omega_6^2 v_1^2 - \omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_6^3 - \omega_{13}^2\omega_7\omega_8^2\omega_6^3 v_1^2 + 7\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_6^2 - 2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6 v_1^2 + \omega_{13}\omega_7^2\omega_8^2\omega_6^3 + \omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6^3$

$C_{21} = -24\omega_7\omega_8\omega_5^2\omega_6^2 + 12\omega_7\omega_5^2\omega_6^2 + 12\omega_7^2\omega_8\omega_5^2 + 24\omega_7\omega_8^2\omega_5\omega_6^2 + \omega_7^2\omega_8^2\omega_5^2\omega_6^2 - 12\omega_7\omega_8^2\omega_6^2 + 12\omega_7^2\omega_8\omega_5^2\omega_6^2 + 12\omega_7^2\omega_5^2\omega_6 + 12\omega_7^2\omega_8^2\omega_6^2 - 14\omega_7^2\omega_8^2\omega_5\omega_6^2 - 12\omega_7^2\omega_8^2\omega_5 - 12\omega_8^2\omega_5\omega_6^2 - 12\omega_7^2\omega_5^2\omega_6^2 - 12\omega_7^2\omega_8^2\omega_6 + 24\omega_7^2\omega_8^2\omega_5\omega_6 + 12\omega_8\omega_5^2\omega_6^2 - 24\omega_7^2\omega_8\omega_5^2\omega_6$

$C_{22} = 2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6 - 2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_6 + 4\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 2\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_6^2 + 2\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9\omega_{12}\omega_6 - 4\omega_{13}\omega_7\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_6^2 + 2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6 - 4\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}\omega_6 + 2\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 + 3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2 - 2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_6^2 - 3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6 - 2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 4\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6 + 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_6 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6 + 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}\omega_6^2 - 4\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 + 2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6$

$C_{23} = -2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{16} + 2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16} - 4\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} - 2\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 4\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16} - 6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6^2\omega_{16} + 4\omega_{10}\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 4\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 2\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 3\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} - 2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 4\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_6^2\omega_{16} - 4\omega_{10}\omega_7\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{16} - 4\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 2\omega_{10}\omega_7^2\omega_{17}\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 4\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16} - 2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} - 2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2\omega_{16} + 2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} - 2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16} + 4\omega_{10}\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 4\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16} + 6\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} + 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} + 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16} - 4\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} + 2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{16} + 2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} - 4\omega_{10}\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16} - 4\omega_{10}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} + 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6\omega_{16} + 3\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 4\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 2\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}$

$C_{24} = 2\omega_{13}\omega_7^3\omega_{17}\omega_8\omega_6^3v_1^2\omega_{16} + 4\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2v_1^2\omega_{16} - 2\omega_{13}\omega_{17}\omega_{14}\omega_8^2\omega_6^3v_1^2\omega_{16} - 2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8\omega_6^3\omega_{16} + \omega_7^3\omega_{17}\omega_8^2\omega_6^3v_1^2\omega_{16} + 2\omega_{13}\omega_7^3\omega_{14}\omega_8\omega_6^3v_2^2\omega_{16} + 2\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8\omega_6^2\omega_{16} + \omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_6^2\omega_{16} - \omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_6^2v_2^2\omega_{16} + 2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2v_1^2\omega_{16} - \omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3\omega_{16} + 2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_6^3\omega_{16} - 4\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_6^3v_1^2\omega_{16} + 2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_6^2v_1^2\omega_{16} + 2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_6^2v_2^2\omega_{16} + \omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{16} - 2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2v_2^2\omega_{16} + 2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_6^3v_2^2\omega_{16} + 4\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_6^2v_1^2\omega_{16} + 2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_6^3\omega_{16} + 2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2v_1^2\omega_{16} - 2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_6v_2^2\omega_{16} - 2\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6\omega_{16} - 6\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_6^3v_2^2\omega_{16} + 4\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3v_1^2\omega_{16} - 2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_6^3v_2^2\omega_{16} - 2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_6^2v_2^2 - \omega_{13}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_6^3\omega_{16} + 2\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2\omega_{16} - \omega_{13}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 - 4\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_6^2v_2^2\omega_{16} - \omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_6^3v_2^2\omega_{16} - 2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_6^3v_1^2\omega_{16} + 2\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8\omega_6^3\omega_{16} - 2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3 + 2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_6^2v_1^2\omega_{16} + 4\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_6^3v_2^2\omega_{16} - \omega_{13}\omega_7^3\omega_{17}\omega_8^2\omega_6^3v_1^2\omega_{16} - 2\omega_{13}\omega_7^3\omega_{14}\omega_8\omega_6^2v_2^2\omega_{16} - 2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2\omega_{16} - 2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{16} - 2\omega_7^3\omega_{17}\omega_8^2\omega_6^2v_1^2\omega_{16} - \omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3v_1^2\omega_{16} + \omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_6^3v_2^2 - 6\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2\omega_{16} - 2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_6^3v_1^2\omega_{16} - 2\omega_{13}\omega_7^3\omega_{17}\omega_8\omega_6^2v_1^2\omega_{16} - 4\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_6^2v_2^2\omega_{16} + 2\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_8\omega_6^3\omega_{16} - \omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3v_1^2\omega_{16} - 2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6v_2^2\omega_{16} + \omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_6^3\omega_{16} - 2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_6^2v_1^2\omega_{16} - 4\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6v_1^2\omega_{16} + 3\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_6v_2^2\omega_{16} - 2\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8\omega_6^2\omega_{16} + \omega_{13}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2\omega_{16} - 2\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_8\omega_6^2\omega_{16} - \omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_6^2v_2^2 + 2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_6^2v_2^2\omega_{16} + \omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3\omega_{16} + 2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_6^3v_1^2\omega_{16} + 2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{16} - 2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_6^3v_2^2\omega_{16} - \omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3\omega_{16} + \omega_7^3c_s^2\omega_{17}\omega_8^2\omega_6^3\omega_{16} - 6\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_6^2v_1^2\omega_{16}$

$C_{25} = 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_{16}^2 + 12\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 4\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 12\omega_{10}\omega_7c_s^2\omega_{17}\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_6v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_6\omega_{16}^2 + 24\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 3\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_6v_2^2\omega_{16}^2 - 2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 + 4\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 + 8\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{16}^2 + 4\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}\omega_6\omega_{16}^2 - 9\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 + 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}\omega_6v_2^2\omega_{16}^2 + 3\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}v_2^2\omega_{16}^2 - 6\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_{16}^2 - 12\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15}\omega_6\omega_{16}^2 - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{16}^2 + 4\omega_{10}^2\omega_7\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 + 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 - 2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 + 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}v_2^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 12\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_{16}^2 + 12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 - 2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16} - 4\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}^2\omega_7^2\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7c_s^2\omega_5\omega_{15}\omega_6\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 12\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 - 4\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16} - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}v_2^2\omega_{16} - 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_6\omega_{16}^2 - 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_6v_2^2\omega_{16}^2 - 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_6v_2^2\omega_{16}^2 - 24\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16}^2 - 2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}v_2^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{16}^2 + 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}v_2^2\omega_{16}^2 - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 + 12\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2 - 4\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 + 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16} - 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8v_2^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 6\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15}\omega_{16}^2 - 4\omega_{10}^2\omega_7^2\omega_5\omega_{15}\omega_{16}^2 + 6\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 - 8\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}v_2^2\omega_{16} + 6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_6v_2^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} + 2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 + 4\omega_{10}^2\omega_7^2\omega_5\omega_{15}v_2^2\omega_{16}^2 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_6\omega_{16}^2 - 8\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 4\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16} + 12\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16}^2 + 12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15}\omega_6\omega_{16}^2 + 6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{16}^2 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 6\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15}\omega_{16}^2 + 4\omega_{10}^2\omega_7^2\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15}\omega_{16}^2 + 6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 + 2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}^2\omega_7\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_{16}^2 - 3\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16}^2 + 9\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6v_2^2\omega_{16}^2 - 2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}v_2^2\omega_{16}^2 - 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16}^2 + 3\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 - 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_6\omega_{16}^2 + 12\omega_{10}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 12\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 - 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 12\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 8\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_2^2\omega_{16} + 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 - 4\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_6v_2^2\omega_{16}^2$

$C_{26} = 12\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_2^2\omega_{16} - 24\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}\omega_6\omega_{16}^2 - 6\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 - 36\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16}^2 + 12\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6^2v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6v_2^2\omega_{16}^2 + 6\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2v_2^2 - 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_6^2v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6v_2^2\omega_{16}^2 - 12\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2v_2^2\omega_{16}^2 +$

$24\omega_{10}^2 c_s^2 \omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2\omega_{16}^2 - 24\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2\omega_{16}^2 + 6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 -$
$12\omega_{10}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 v_2^2\omega_{16}^2 - 54\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 -$
$12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{16}^2 - 54\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 - 18\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 -$
$12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16}^2 + 12\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16}^2 - \omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16}^2 +$
$36\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 - 9\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 - 12\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_6^2\omega_{16}^2 +$
$3\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16} -$
$12\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 9\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16}^2 - 36\omega_{10}^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 36\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 42\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}^2 -$
$12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16}^2 + 6\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{16}^2 + 18\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} +$
$12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{16}^2 + 18\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16} + 54\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16}^2 -$
$6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6 v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}^2 + 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6\omega_{16}^2 +$
$6\omega_{10}^2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5\omega_6^2\omega_{16}^2 + \omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 +$
$12\omega_{10}^2\omega_7 c_s^2\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 54\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16}^2 - 18\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} - 9\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16}^2 +$
$6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6 v_2^2\omega_{16}^2 + 3\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2 v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6^2\omega_{16}^2 + 6\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 +$
$12\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 18\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{16}^2 + 12\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} -$
$6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 12\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16}^2 - 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 -$
$24\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_6\omega_{16}^2 + 12\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 -$
$6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 12\omega_{10}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2\omega_{16}^2 -$
$24\omega_{10}^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16}^2 - 12\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 36\omega_{10} c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{16}^2 + 30\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 +$
$6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} + 12\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 +$
$12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}^2 - 6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16} - 18\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 6\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16} -$
$12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2 - 6\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 - 12\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6^2 v_2^2\omega_{16}^2 +$
$12\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}^2 + 24\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2\omega_{16}^2 -$
$3\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 v_2^2\omega_{16} + 12\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{16}^2 + 12\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 + 24\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{16} +$
$12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_6^2\omega_{16}^2 + 42\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{16}^2 - 12\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{16}^2 - 9\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{16}$

$C_{27} = 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 4\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_{16}^2 + 4\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 +$
$4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{10}^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 4\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 4\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}\omega_7 c_s^2\omega_{17}\omega_5\omega_{15}\omega_6\omega_{16}^2 +$
$12\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_6 v_2^2\omega_{16}^2 + 4\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_6\omega_{16}^2 + 8\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 9\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_6 v_2^2\omega_{16}^2 - 2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 +$
$6\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 + 12\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 + 8\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{16}^2 + 4\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}\omega_6\omega_{16}^2 -$
$3\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 + 12\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}\omega_6 v_2^2\omega_{16}^2 + 9\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 + 2\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 -$
$12\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} v_2^2\omega_{16}^2 - 2\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 + 2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_{16}^2 - 4\omega_{10}^2\omega_7^2 c_s^2\omega_5\omega_{15}\omega_6\omega_{16}^2 - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{16}^2 +$
$12\omega_{10}^2\omega_7\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 + 4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 - 6\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 + 12\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} v_2^2\omega_{16}^2 - 2\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16} -$
$4\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_{16}^2 + 4\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8\omega_{15}\omega_{16}^2 + 12\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 - 6\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16} - 4\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_6\omega_{16}^2 -$
$12\omega_{10}^2\omega_7^2\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 + 4\omega_{10}^2\omega_7 c_s^2\omega_5\omega_{15}\omega_6\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} - 4\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 -$
$4\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16} - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} v_2^2\omega_{16} - 4\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_6\omega_{16}^2 -$
$4\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_6 v_2^2\omega_{16}^2 - 12\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_6 v_2^2\omega_{16}^2 - 8\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16}^2 -$
$6\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 v_2^2\omega_{16}^2 + 4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 6\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} v_2^2\omega_{16}^2 - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 +$
$4\omega_{10}^2\omega_7 c_s^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 12\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2 - 12\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16} - 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8 v_2^2\omega_{16}^2 +$
$2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_5\omega_{15}\omega_{16}^2 - 4\omega_{10}^2\omega_7^2\omega_5\omega_{15}\omega_{16}^2 + 2\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 -$
$24\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} v_2^2\omega_{16} + 2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 6\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_6 v_2^2\omega_{16}^2 -$
$2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} + 2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 + 12\omega_{10}^2\omega_7^2\omega_5\omega_{15} v_2^2\omega_{16}^2 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_6\omega_{16}^2 - 8\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} -$
$12\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16} + 4\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_5\omega_{15}\omega_6\omega_{16}^2 + 2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{16}^2 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16} -$
$2\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5\omega_{15}\omega_{16}^2 + 4\omega_{10}^2\omega_7^2\omega_5\omega_{15}\omega_6\omega_{16}^2 + 12\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 + 4\omega_{10}^2\omega_7^2 c_s^2\omega_5\omega_{15}\omega_{16}^2 + 2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16} -$
$4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 + 2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 - 4\omega_{10}^2\omega_7\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_{16}^2 - 3\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 -$
$4\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}\omega_6\omega_{16}^2 + 3\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 12\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 v_2^2\omega_{16}^2 - 2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 12\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} v_2^2\omega_{16}^2 -$
$12\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16}^2 + 3\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 - 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_6\omega_{16}^2 + 4\omega_{10} c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 4\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}^2 -$
$4\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6\omega_{16} - 4\omega_{10}^2\omega_7 c_s^2\omega_8\omega_5\omega_{15}\omega_6\omega_{16}^2 + 24\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{16} + 4\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_6\omega_{16}^2 - 12\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_6 v_2^2\omega_{16}^2$

$C_{28} = \omega_7^3\omega_{17}\omega_8\omega_6\omega_{16}^2 + \omega_7^3\omega_{17}\omega_8^2\omega_6^2 v_2^2 + 13\omega_7 c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{16}^2 - \omega_7^3 c_s^2\omega_8^2\omega_6^2\omega_{16} - 2\omega_7\omega_{17}\omega_8^2\omega_6^2 v_2^2\omega_{16} + 2\omega_7^3 c_s^2\omega_{17}\omega_6\omega_{16}^2 + \omega_7^3\omega_{17}\omega_8^2\omega_6 v_2^2\omega_{16} +$
$4\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{16} - \omega_7^2\omega_{17}\omega_8^2\omega_6\omega_{16}^2 - \omega_7^2\omega_{17}\omega_8^2\omega_6^2 v_2^2\omega_{16}^2 + 5\omega_7^3 c_s^2\omega_{17}\omega_8\omega_6^2\omega_{16}^2 - 2\omega_7^2\omega_8\omega_6^2\omega_{16}^2 - 2\omega_7^2\omega_8^2\omega_6^2 v_2^2\omega_{16}^2 + 2\omega_7^2 c_s^2\omega_{17}\omega_6^2\omega_{16}^2 +$
$\omega_7^3\omega_{17}\omega_8\omega_6^2 v_2^2\omega_{16}^2 + \omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_6^2 - \omega_7^3\omega_8^2\omega_6 v_2^2\omega_{16}^2 + \omega_7^2\omega_{17}\omega_8\omega_6^2\omega_{16}^2 + \omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_6\omega_{16} + 4\omega_7^2 c_s^2\omega_{17}\omega_8\omega_6\omega_{16}^2 + 2\omega_7^3\omega_8\omega_6^2\omega_{16}^2 +$
$2\omega_7^3 c_s^2\omega_8\omega_6\omega_{16}^2 + 2\omega_7^2\omega_8^2\omega_6^2 v_2^2\omega_{16} + \omega_7^3\omega_{17}\omega_8^2\omega_6^2\omega_{16} + \omega_7^3\omega_8^2\omega_6\omega_{16}^2 - 5\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{16}^2 + 2\omega_7^2\omega_{17}\omega_8^2\omega_6\omega_{16} - 2\omega_7^3\omega_8\omega_6^2 v_2^2\omega_{16}^2 +$
$4\omega_7^2\omega_{17}\omega_8^2\omega_6^2 v_2^2\omega_{16} + 2\omega_7^2 c_s^2\omega_8\omega_6^2\omega_{16}^2 - 2\omega_7 c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{16} + \omega_7^3 c_s^2\omega_8^2\omega_6^2\omega_{16}^2 + \omega_7\omega_{17}\omega_8^2\omega_6^2 v_2^2\omega_{16}^2 - \omega_7^2\omega_{17}\omega_8\omega_6^2 v_2^2\omega_{16}^2 - 4\omega_7^2\omega_{17}\omega_8^2\omega_6^2\omega_{16} -$
$\omega_7^3\omega_8^2\omega_6^2 v_2^2\omega_{16} + 7\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_6\omega_{16}^2 - \omega_7^3\omega_8^2\omega_6^2\omega_{16}^2 - 2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_{16}^2 - 2\omega_7^2\omega_8^2\omega_6^2\omega_{16} - \omega_7^3 c_s^2\omega_8^2\omega_6\omega_{16}^2 - 2\omega_7^2 c_s^2\omega_8^2\omega_6^2\omega_{16}^2 + 2\omega_7^3\omega_8\omega_6 v_2^2\omega_{16}^2 -$
$\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{16} - 2\omega_7^2\omega_{17}\omega_8^2\omega_6 v_2^2\omega_{16} + 2\omega_7^2\omega_{17}\omega_8^2\omega_6^2 - 2\omega_7^3\omega_8\omega_6\omega_{16}^2 - 11\omega_7^2 c_s^2\omega_{17}\omega_8\omega_6^2\omega_{16}^2 + 2\omega_7^2\omega_8\omega_6^2 v_2^2\omega_{16}^2 + 2\omega_7\omega_{17}\omega_8^2\omega_6^2\omega_{16} -$
$2\omega_7^3 c_s^2\omega_8\omega_6^2\omega_{16}^2 + 2\omega_7^3 c_s^2\omega_{17}\omega_8\omega_{16}^2 - \omega_7^3\omega_{17}\omega_8^2\omega_6\omega_{16} - \omega_7\omega_{17}\omega_8^2\omega_6^2\omega_{16}^2 - \omega_7^3\omega_{17}\omega_8^2\omega_6^2 + 6\omega_7 c_s^2\omega_{17}\omega_8\omega_6^2\omega_{16}^2 + 2\omega_7^2 c_s^2\omega_8^2\omega_6^2\omega_{16} +$
$\omega_7^2\omega_{17}\omega_8^2\omega_6 v_2^2\omega_{16}^2 - \omega_7^3\omega_{17}\omega_8^2\omega_6^2 v_2^2\omega_{16} - 2\omega_7^2\omega_{17}\omega_8^2\omega_6^2 v_2^2 - 6\omega_7 c_s^2\omega_{17}\omega_8^2\omega_6\omega_{16}^2 - 2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_6^2 - \omega_7^3\omega_{17}\omega_8\omega_6^2\omega_{16}^2 - 2\omega_7^3 c_s^2\omega_{17}\omega_6^2\omega_{16}^2 +$
$2\omega_7^2\omega_8^2\omega_6^2\omega_{16}^2 + \omega_7^3\omega_8^2\omega_6^2 v_2^2\omega_{16}^2 + \omega_7^2\omega_{17}\omega_8^2\omega_6^2\omega_{16}^2 + \omega_7^3\omega_8^2\omega_6^2\omega_{16} - 8 c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{16}^2 - 2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_6\omega_{16} - \omega_7^3\omega_{17}\omega_8\omega_6 v_2^2\omega_{16}^2 - 7\omega_7^3 c_s^2\omega_{17}\omega_8\omega_6\omega_{16}^2$

$C_{29} = 48\omega_{10}^2\omega_7 c_s^4\omega_{16} + 30\omega_{10}^2\omega_7^2 v_2^2\omega_{16} + 24\omega_{10} c_s^4\omega_{16}^2 + 24\omega_{10}^2\omega_7 v_2^2 - 144\omega_{10}\omega_7 c_s^2 v_2^2\omega_{16} + 24\omega_{10}^2 c_s^2\omega_{16} + \omega_{10}^2\omega_7^2 c_s^2\omega_{16}^2 + 96\omega_{10}\omega_7 v_2^2\omega_{16}^2 +$
$14\omega_{10}\omega_7^2 c_s^4\omega_{16}^2 + 432\omega_{10}^2\omega_7 c_s^2 v_2^2\omega_{16} - 12\omega_7^2 c_s^4\omega_{16}^2 - 72\omega_7 v_2^2\omega_{16}^2 + 72\omega_{10}^2\omega_7^2 c_s^2 v_2^2 + 12\omega_{10}^2\omega_7^2 v_2^4 + 24\omega_{10}\omega_7^2 v_2^4\omega_{16} + 288\omega_7 c_s^2 v_2^2\omega_{16}^2 - 216\omega_{10}^2 c_s^2 v_2^2\omega_{16} +$
$36\omega_{10}\omega_7^2 v_2^4\omega_{16}^2 + 48\omega_{10}\omega_7 c_s^2\omega_{16}^2 + 48\omega_{10}\omega_7 v_2^2\omega_{16} - 24\omega_7 c_s^2\omega_{16}^2 - 36\omega_7^2 v_2^4\omega_{16}^2 - 12\omega_{10}^2\omega_7^2 c_s^2 + 48\omega_{10} v_2^4\omega_{16}^2 - 432\omega_{10}\omega_7 c_s^2 v_2^2\omega_{16}^2 - 24\omega_{10}^2\omega_7 c_s^4 +$
$12\omega_{10}^2\omega_7^2 c_s^2\omega_{16} + 96\omega_{10}^2\omega_7 v_2^4\omega_{16} + 3\omega_{10}^2\omega_7^2 v_2^2\omega_{16}^2 + 48\omega_{10}^2 v_2^2\omega_{16} - 14\omega_{10}\omega_7^2 c_s^2\omega_{16}^2 - 96\omega_{10}\omega_7 v_2^4\omega_{16}^2 + 72\omega_{10}\omega_7^2 c_s^2 v_2^2\omega_{16} + 12\omega_{10}^2\omega_7^2 c_s^4 + 72\omega_7 v_2^4\omega_{16}^2 +$
$12\omega_7^2 c_s^2\omega_{16}^2 - 24\omega_{10}\omega_7^2 v_2^2\omega_{16} - 30\omega_{10}^2\omega_7^2 v_2^4\omega_{16} - 48\omega_{10}^2\omega_7 c_s^2\omega_{16} - 24\omega_{10} c_s^2\omega_{16}^2 + 216\omega_{10} c_s^2 v_2^2\omega_{16}^2 - 24\omega_{10}^2 c_s^4\omega_{16} + 24\omega_{10}^2\omega_7 c_s^2 - \omega_{10}^2\omega_7^2 c_s^4\omega_{16}^2 -$

$126\omega_{10}^2\omega_7^2c_s^2v_2^2\omega_{16} - 48\omega_{10}v_2^2\omega_{16}^2 - 96\omega_{10}^2\omega_7v_2^2\omega_{16} - 12\omega_{10}^2\omega_7^2c_s^4\omega_{16} - 12\omega_{10}^2\omega_7^2c_s^2v_2^2\omega_{16}^2 - 3\omega_{10}^2\omega_7^2v_2^4\omega_{16}^2 - 144\omega_7^2c_s^2v_2^2\omega_{16}^2 - 48\omega_{10}^2v_2^4\omega_{16} -$
$24\omega_{10}^2\omega_7v_2^4 - 12\omega_{10}^2\omega_7^2v_2^2 - 48\omega_{10}\omega_7c_s^4\omega_{16}^2 - 36\omega_{10}\omega_7^2v_2^2\omega_{16}^2 - 48\omega_{10}\omega_7v_2^4\omega_{16} - 144\omega_{10}^2\omega_7c_s^2v_2^2 + 36\omega_7^2v_2^2\omega_{16}^2 + 24\omega_7c_s^4\omega_{16}^2 + 150\omega_{10}\omega_7^2c_s^2v_2^2\omega_{16}^2$

$C_{30} =$
$24\omega_7^2\omega_{16}^2 - 51\omega_{10}^2\omega_7^2v_2^2\omega_{16} + 36\omega_{10}^2\omega_{16} - 25\omega_{10}\omega_7^2\omega_{16}^2 - 48\omega_{10}^2\omega_7v_2^2 - 60\omega_{10}^2c_s^2\omega_{16} - 3\omega_{10}^2\omega_7^2c_s^2\omega_{16}^2 - 168\omega_{10}\omega_7v_2^2\omega_{16}^2 + 120\omega_7v_2^2\omega_{16}^2 - 24\omega_{10}\omega_7c_s^2\omega_{16} -$
$120\omega_{10}\omega_7c_s^2\omega_{16}^2 - 72\omega_{10}\omega_7v_2^2\omega_{16} - 72\omega_{10}^2\omega_7\omega_{16} + 72\omega_7c_s^2\omega_{16}^2 + 24\omega_{10}^2\omega_7^2c_s^2 - 33\omega_{10}^2\omega_7^2c_s^2\omega_{16} - 5\omega_{10}^2\omega_7^2v_2^2\omega_{16}^2 - 84\omega_{10}^2v_2^2\omega_{16} - 12\omega_{10}\omega_7^2\omega_{16} +$
$39\omega_{10}\omega_7^2c_s^2\omega_{16}^2 - 36\omega_7^2c_s^2\omega_{16}^2 + 24\omega_{10}\omega_7\omega_{16} + 36\omega_{10}\omega_7^2v_2^2\omega_{16} - 36\omega_{10}\omega_{16}^2 + 120\omega_{10}^2\omega_7c_s^2\omega_{16} + 60\omega_{10}c_s^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2 + 21\omega_{10}^2\omega_7^2\omega_{16} - 48\omega_{10}^2\omega_7c_s^2 +$
$24\omega_{10}^2\omega_7 + 2\omega_{10}^2\omega_7^2\omega_{16}^2 + 84\omega_{10}v_2^2\omega_{16}^2 + 168\omega_{10}^2\omega_7v_2^2\omega_{16} - 48\omega_7\omega_{16}^2 + 24\omega_{10}^2\omega_7^2v_2^2 + 72\omega_{10}\omega_7\omega_{16}^2 + 61\omega_{10}\omega_7^2v_2^2\omega_{16}^2 + 12\omega_{10}\omega_7^2c_s^2\omega_{16} - 60\omega_7^2v_2^2\omega_{16}^2$

$C_{31} = 24c_s^4\omega_{16}^2 + 12\omega_7^2c_s^2v_2^2 + \omega_7^3c_s^2\omega_{16}^2 + 24\omega_7^2v_2^2 - 24\omega_7c_s^2\omega_{16} + 72\omega_7^2v_2^4\omega_{16} + 24\omega_7^2c_s^4\omega_{16}^2 - 24\omega_7v_2^2\omega_{16}^2 - 24\omega_7c_s^2v_2^2\omega_{16} + 18\omega_7^3v_2^2\omega_{16} +$
$156\omega_7c_s^2v_2^2\omega_{16}^2 - 24\omega_7^2c_s^4\omega_{16} + 48\omega_7v_2^2\omega_{16} - 3\omega_7^3v_2^2\omega_{16}^2 - 6\omega_7^3c_s^2\omega_{16} + 12\omega_7c_s^2\omega_{16}^2 - 24\omega_7^2v_2^4\omega_{16}^2 - 12\omega_7^3v_2^2 - 3\omega_7^3c_s^4\omega_{16}^2 - 72\omega_7^2v_2^2\omega_{16} +$
$24\omega_7c_s^4\omega_{16} + 24\omega_7v_2^4\omega_{16}^2 - 8\omega_7^2c_s^2\omega_{16}^2 - 18\omega_7^3v_2^4\omega_{16} + 12\omega_7^3v_2^4 + 48\omega_7^2c_s^2v_2^2\omega_{16} + 6\omega_7^3c_s^2v_2^2\omega_{16}^2 - 96c_s^2v_2^2\omega_{16}^2 - 24\omega_7^2c_s^2v_2^2 - 12\omega_7^3c_s^2v_2^2\omega_{16} -$
$72\omega_7^2c_s^2v_2^2\omega_{16}^2 - 48\omega_7v_2^4\omega_{16} + 24\omega_7^2c_s^2\omega_{16} + 3\omega_7^3v_2^4\omega_{16}^2 + 6\omega_7^3c_s^4\omega_{16} + 24\omega_7^2v_2^2\omega_{16}^2 - 48\omega_7c_s^4\omega_{16}^2 - 24\omega_7^2v_2^4$

$C_{32} =$
$-12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 - 36\omega_{13}^2c_s^4\omega_9\omega_6^3\omega_{22} + 3\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 18\omega_{13}^2c_s^4\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^3v_1^2 + 36\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2 -$
$36\omega_{13}^2v_3^2c_s^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22}v_1^2 + 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 72\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} -$
$6v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2\omega_9\omega_6^3\omega_{22} - 24\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 + 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 +$
$12c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3v_1^2 + 36\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 24\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} -$
$12v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 96\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_{22} - 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 36\omega_{13}^2v_3^2c_s^2\omega_9^2\omega_6^3 + 6\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 36\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} +$
$36\omega_{13}^2c_s^4\omega_9^2\omega_6^3 - 18\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2v_3^2\omega_{11}\omega_9\omega_6^3\omega_{22}v_1^2 - \omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} -$
$12\omega_{13}^2v_3^2\omega_9^2\omega_6^3 + 6\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 12c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^3v_1^2 + 48\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 36\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 -$
$12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2v_1^2 + 72\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 18\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 24\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 -$
$72\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 6c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2v_1^2 + 12v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^2v_1^2 +$
$18\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 72\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 +$
$12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 60\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^3 - 12\omega_{13}^2c_s^2\omega_9^2\omega_6^3 +$
$6c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3v_1^2 - 6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 6c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^2v_1^2 - 36\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2 +$
$12\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^2 + 12\omega_{13}^2c_s^2\omega_9^2\omega_6^3v_1^2 - 3\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 -$
$36\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 24\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 - 5\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 36\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 +$
$18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 15\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2v_1^2 +$
$9\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}^2c_s^2\omega_9\omega_6^3\omega_{22} - 18\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} + 54\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}\omega_9\omega_6^2\omega_{22} +$
$6v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}^2v_3^2\omega_9\omega_6^3\omega_{22}v_1^2 - 42\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 +$
$12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22}v_1^2 + 15\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 9\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2v_3^2\omega_{11}\omega_9\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 -$
$18\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^3 + 18v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_9\omega_6^3\omega_{22}v_1^2 - 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3 -$
$6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3v_1^2 - 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 - 36\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22} - 45\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 108\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} +$
$36\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3 - 18\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 156\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 18\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} -$
$36\omega_{13}^2c_s^4\omega_{11}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^3 + 18\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 48\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 36\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} -$
$15\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 36\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^2\omega_{22} + 15\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2v_3^2\omega_{11}\omega_9\omega_6^3\omega_{22} + 18\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 +$
$24\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 36\omega_{13}^2c_s^4\omega_{11}\omega_9^2\omega_6^3 - 6\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3v_1^2 - 12c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3v_1^2 - 36\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9^2\omega_6^3 +$
$\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 + 3\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3v_1^2 +$
$36\omega_{13}^2c_s^4\omega_{11}\omega_9\omega_6^3\omega_{22} + 5\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 27\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 144\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_9^2\omega_6^3v_1^2 -$
$12\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^2 + 36\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9^2\omega_6^2 - 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^2\omega_{22} - 6\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22} + 24\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 +$
$36\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2v_1^2 + 36\omega_{13}^2c_s^4\omega_{11}\omega_9^2\omega_6^2 - 24\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22}v_1^2 - 36v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}$

$C_{33} = -36\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 - 12\omega_{13}^2c_s^4\omega_9\omega_6^3\omega_{22} - \omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 6\omega_{13}^2c_s^4\omega_{18}\omega_9\omega_6^3\omega_{22} - 36\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^3v_1^2 +$
$12\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2 - 12\omega_{13}^2v_3^2c_s^2\omega_9\omega_6^3\omega_{22} + 60\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22}v_1^2 + 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} -$
$24\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 6v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2\omega_9\omega_6^3\omega_{22} - 72\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 + 18\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 -$
$6\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 18\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3v_1^2 + 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$24\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 36v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_{22} - 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}^2v_3^2c_s^2\omega_9^2\omega_6^3 + 6\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$12\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^4\omega_9\omega_6^3 - 6\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 36\omega_{13}^2v_3^2\omega_{11}\omega_9\omega_6^3\omega_{22}v_1^2 -$
$12\omega_{13}^2v_3^2\omega_9^2\omega_6^3 + 6\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 36\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^3v_1^2 + 144\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 108\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 -$
$36\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2v_1^2 + 24\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 72\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 -$
$24\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 36\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2v_1^2 + 12v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 36\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^3\omega_{22}v_1^2 + 36\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^2v_1^2 +$
$6\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 15\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 +$
$36\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 5\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^3 -$
$12\omega_{13}^2c_s^2\omega_9^2\omega_6^3 - 12c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 + 18\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3v_1^2 - 6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 36\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^2v_1^2 - 12\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2 +$
$12\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + \omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^2 + 36\omega_{13}^2c_s^2\omega_9^2\omega_6^3v_1^2 + 30\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 -$
$12\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 24\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 - 15\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 +$
$6\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 45\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 + 18\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 36\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2v_1^2 +$
$27\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}^2c_s^2\omega_9\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} + 18\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}\omega_9\omega_6^2\omega_{22} +$
$18v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 - 36\omega_{13}^2v_3^2\omega_9\omega_6^3\omega_{22}v_1^2 - 18\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 6\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 60\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 +$
$15\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 9\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 36\omega_{13}^2v_3^2\omega_{11}\omega_9\omega_6^2\omega_{22}v_1^2 + 36\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^3 +$
$6v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 36\omega_{13}^2c_s^2\omega_9\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3 - 18\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3v_1^2 -$
$36\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22} - 15\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 36\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 +$
$6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3 + 18\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 18\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 18\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^4\omega_{11}\omega_9\omega_6^2\omega_{22} +$

$$12\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^3 - 102\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 48\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 36\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 5\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} +$$
$$12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^2\omega_{22} + 6\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2v_3^2\omega_{11}\omega_9\omega_6^3\omega_{22} + 54\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 + 24\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} -$$
$$12\omega_{13}^2c_s^4\omega_{11}\omega_9^2\omega_6^3 - 18\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3v_1^2 + 24c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 - 18\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3v_1^2 - 48\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_{22}v_1^2 - 12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9^2\omega_6^3 -$$
$$6\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 18\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^3\omega_{22}v_1^2 - 36\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22}v_1^2 - 18\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3v_1^2 + 12\omega_{13}^2c_s^4\omega_{11}\omega_9\omega_6^3\omega_{22} +$$
$$5\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 9\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 48\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 36\omega_{13}^2v_3^2\omega_9^2\omega_6^3v_1^2 - 12\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^2 +$$
$$12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9^2\omega_6^2 - 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^2\omega_{22} - 18\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^3\omega_{22} + 72\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 +$$
$$12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9\omega_6^3\omega_{22} + 36\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2v_1^2 + 12\omega_{13}^2c_s^4\omega_{11}\omega_9^2\omega_6^2 - 72\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22}v_1^2 - 12v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}$$

$C_{34} =$

$$12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 + 24\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 24\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2v_1^2 - 72\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} + 12\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$$
$$24\omega_{13}^2c_s^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 90\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 42\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 60\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 +$$
$$6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 36\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22} + 12\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3 - 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} -$$
$$84\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 - 4\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 66\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22}v_1^2 +$$
$$156\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22} + 24\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22} - 132\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} +$$
$$24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 - 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 6\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + \omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}v_1^2 -$$
$$24\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3v_1^2 - 6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 24\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 24\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} -$$
$$24\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2 + 24\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3v_1^2 - 18\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 - 96\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 +$$
$$18\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 48\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 24\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 +$$
$$6\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 18\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 -$$
$$24\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2v_1^2 + 24\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 - 12\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3 + 18\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 36\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} -$$
$$48c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}v_1^2 - 24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 + 72\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} -$$
$$24\omega_{13}^2c_s^2\omega_{11}^2\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^3\omega_6^2v_1^2 -$$
$$24\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 + 24c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 18\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^3\omega_6^2\omega_{22} - 66\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}v_1^2 +$$
$$12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3v_1^2 - 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 4\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}v_1^2 - 66\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} -$$
$$12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}v_1^2 + 84\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 24\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 +$$
$$12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} + 24\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2v_1^2 - 36\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} - 12\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3v_1^2 -$$
$$12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 + 24\omega_{13}^2c_s^2\omega_{11}^2\omega_9^2\omega_6^2\omega_{22} - \omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 36\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22}v_1^2$$

$$C_{35} = 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2 + \omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 -$$
$$\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 + \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_1 -$$
$$4\omega_{13}c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_1 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 +$$
$$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - \omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$$
$$4\omega_{13}c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_1 + 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 -$$
$$\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2 +$$
$$2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 + \omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1 + \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2 -$$
$$2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2^2v_1 - \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 +$$
$$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}v_2 + 2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 - 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 +$$
$$\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 -$$
$$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - \omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 +$$
$$\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2^2v_1 - \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 -$$
$$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 -$$
$$2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - 8\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 +$$
$$2\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + \omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1 +$$
$$\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_1 + 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 -$$
$$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 -$$
$$\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 + \omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 -$$
$$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$$
$$\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 +$$
$$4\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 - \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2 -$$
$$\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2v_1^2 -$$
$$2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 -$$
$$2\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 -$$
$$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2v_1^2 - \omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 +$$
$$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1 +$$
$$\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_1 -$$
$$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 +$$
$$4\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 - \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2 -$$
$$\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2v_1^2 -$$
$$2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 -$$
$$2\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 -$$
$$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2v_1^2 - \omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 +$$
$$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1 +$$
$$2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_1 -$$
$$2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 +$$

$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6\omega_{22}\omega_{19}v_2 -$
$\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 +$
$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 - \omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 -$
$\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 - \omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 +$
$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$
$\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + \omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 -$
$2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + \omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$
$2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 + \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_1 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 -$
$\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2 + 2\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$
$\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 +$
$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 - \omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 -$
$\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}\omega_7v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 +$
$\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_1 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - \omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2v_1^2 -$
$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2v_1^2 -$
$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1 + 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 - \omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$
$\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1 + \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 -$
$2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 -$
$\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 -$
$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2 - \omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 -$
$2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 8\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_1 -$
$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + \omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1 +$
$2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + \omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1^2 - 2\omega_{13}\omega_7v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_1 +$
$2\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1 +$
$2\omega_{13}\omega_7v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2 + 2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 -$
$\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 - 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_1 +$
$4\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 - 2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 +$
$2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 + \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 +$
$\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}v_2v_1^2 + \omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$
$\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - \omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 +$
$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 -$
$2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - \omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6\omega_{22}\omega_{19}v_2 +$
$2\omega_{13}\omega_7v_3^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 - \omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 -$
$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1 -$
$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$
$\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7v_3^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 +$
$2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}v_2v_1^2 + \omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$
$2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 +$
$8\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 -$
$2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1 + \omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 + 2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 +$
$\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2 - 2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 + \omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1^2 -$
$8\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 +$
$2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1^2 - \omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 +$
$\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + \omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2v_1 - 4\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 -$
$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + \omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1$

$C_{36} = 2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2 - 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 + 6\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2 + 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}v_2^2 +$
$2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 + \omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2^2 - \omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 -$
$2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 - \omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 +$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2 + 2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 -$
$4\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$

$2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2 - 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} -$
$2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 10\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6\omega_{22}\omega_{19}v_2v_1 -$
$4\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2 + \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 4\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2^2 + 4\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}v_2v_1 -$
$4\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2 - \omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 -$
$4\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 +$
$4\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 + 4\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2 -$
$2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} - 4\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2v_1 - 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$4\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 4\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 - 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2^2 +$
$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 + 2\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 6\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6\omega_{22}\omega_{19}v_2v_1 +$
$2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2 + 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 - \omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 -$
$2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 - 4\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 4\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2v_1 +$
$\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2 - 4\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 8\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_{22}\omega_{19}v_2v_1 -$
$2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 + \omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 -$
$2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 4\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2v_1 - \omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2 + 4\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 + 4\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2^2 + 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} - 4\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 -$
$2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 + 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2v_1 +$
$2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19}v_2^2 + \omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2^2 + 4\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 -$
$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 + 4\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 8\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 + \omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 +$
$2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 - \omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2^2 + 4\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 -$
$2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 4\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$4\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 4\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2 +$
$2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 + \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} +$
$2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + \omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} - 4\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2v_1 -$
$4\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 4\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2^2 -$
$4\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 +$
$4\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 +$
$\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + \omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 + 4\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 -$
$2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19} - 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2 + 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} +$
$4\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 + \omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2^2 +$
$2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^3\omega_6^2\omega_{19}v_2^2 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 -$
$2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - \omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22} - 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_8^3\omega_{19}v_2^2 +$
$4\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - \omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2^2 +$
$\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 + 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2 - 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19} + 4\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 +$
$2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2 - \omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 -$
$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 + \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 -$
$12\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} +$
$2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 + 4\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2v_1 -$
$2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6\omega_{22}\omega_{19}v_2v_1 -$
$\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 + 4\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$6\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}v_2^2 +$
$4\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2^2 + 2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 +$
$\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2^2 +$
$2\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 - \omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + \omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 -$

$2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 4\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19} +$
$4\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 4\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}v_2v_1 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 4\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 +$
$2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2 - \omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2 + 2\omega_{13}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$4\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 - 4\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 2\omega_{13}^2\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}$

$C_{37} = -12\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 6\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1^2 - 24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 -$
$12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 - 12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 +$
$6\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 - 12\omega_{13}\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 24\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_1^2 -$
$24\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1^2 + 42\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$24\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$24\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 - 6\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} -$
$24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2v_1 + 24\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 -$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_1^2 - 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$24\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 24\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 - 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 - 24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 12\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 +$
$12\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 - 18\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 - 12\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 -$
$24\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19} - 6\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} - 6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 - 24\omega_{13}\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 24\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$12\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$24\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 12\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19}v_1^2 - 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19}v_1^2 +$
$24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 6\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 +$
$24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2v_1 + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19} +$
$24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} +$
$10\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 6\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 -$
$24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2v_1 + 6\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 +$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2v_1 + 24\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 - 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 -$
$12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} - 24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 6\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1^2 +$
$12\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_1^2 - 12\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 + 24\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$12\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 +$
$12\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_1^2 - 18\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$24\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 24\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 - 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$24\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 24\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 -$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2v_1 + 6\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 24\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$6\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 +$
$24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2v_1 - 12\omega_{13}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 -$
$6\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1^2 - 24\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 12\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 -$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 12\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_1^2 + 24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 -$
$6\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} -$
$24\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 12\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 6\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} -$
$24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2v_1 + 6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} +$
$6\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 36\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} -$
$24\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 6\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 -$
$24\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 - 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 6\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} -$
$24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2v_1 + 6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} +$
$6\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 36\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} -$
$24\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 6\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 -$
$24\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 - 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 6\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} -$
$24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2v_1 + 6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} +$
$6\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 36\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} -$
$24\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 6\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 -$
$24\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 - 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 12\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 +$

$12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 18\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_1^2 +$
$12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 - 24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2v_1 +$
$6\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 6\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 +$
$12\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 + 24\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 - 12\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} +$
$6\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1^2 -$
$12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 12\omega_{13}\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_1^2 -$
$12\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 - 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 -$
$24\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2v_1 + 6\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1^2 - 24\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$24\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 60\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 6\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 +$
$12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 12\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$2\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 36\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 - 12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 +$
$12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2v_1 - 6\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1^2 -$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 - 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} + 12\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1^2 -$
$24\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2v_1 + 12\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 - 12\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$6\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 6\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 60\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} - 24\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$6\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 - 12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_1^2 - 12\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 +$
$12\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1^2 + 12\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 + 6\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 -$
$12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 6\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$6\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_1^2 + 24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 -$
$24\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_2v_1 + 12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_8^3\omega_{19}v_1^2 + 24\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 +$
$12\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19}v_1^2 - 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$36\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 6\omega_{13}\omega_7^3v_3^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 6\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 -$
$24\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 6\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 - 18\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6\omega_{22}\omega_{19}v_1^2 - 24\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 + 6\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 +$
$12\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2v_1 - 12\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 + 24\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 24\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19}v_2v_1 -$
$12\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1 - 24\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{22}\omega_{19} - 24\omega_{13}\omega_7v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{22}\omega_{19} -$
$24\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1 - 24\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}v_1^2 -$
$6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1^2 + 12\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1$

$C_{38} = 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 + 6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{22}\omega_{19}v_2 +$
$4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2^2v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_2 + 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}v_2v_1^2 -$
$2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$
$4\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}v_2v_1^2 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}v_2 + 4\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 +$
$8\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 +$
$4\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_2v_1^2 -$
$8\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 -$
$8\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}v_1 +$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1^2 + 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 -$
$4\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 - 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 -$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}v_2 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}v_2v_1^2 +$
$4\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 +$
$4\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2^2v_1 +$
$4\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 4\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 +$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}v_1 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 8\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 -$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1 - 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 -$
$2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_2v_1^2 - 4\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 -$
$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_1 +$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}v_2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2v_1^2 +$
$4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2v_1^2 +$
$4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_1 + 4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 +$
$2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2^2v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_1 +$
$2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 - 4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 -$
$\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19}v_2 +$
$4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}v_2 -$
$4\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2^2v_1 - 4\omega_{13}\omega_7c_s^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_1 -$

$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_1 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1 + 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 +$
$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2 - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_2v_1^2 - 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 -$
$12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2 + 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}v_1 -$
$2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2^2v_1 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}v_2 - 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 +$
$4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2 -$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_1 + 4\omega_{13}c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}v_2v_1^2 -$
$4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 + 8\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 +$
$4\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 -$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_1 - 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 +$
$4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 +$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_2^2v_1 + 4\omega_{13}\omega_7c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 -$
$4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}v_2^2v_1 - 12\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_2 +$
$2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_1 - 4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2v_1^2 +$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_1 - 4\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}v_2^2v_1 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 +$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}v_2 - 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 - 14\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 -$
$4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 + 2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 -$
$4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 +$
$2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_2^2v_1 + 4\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 -$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_1 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 +$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}v_1 -$
$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_1 + 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 - 4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{22}\omega_{19}v_2 +$
$4\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 -$
$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2\omega_6\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 +$
$4\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 - 4\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$
$4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2 + 4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2v_1^2 + 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}v_2^2v_1 -$
$4\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 +$
$4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 -$
$4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 + 12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{22}\omega_{19}v_2 +$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 + 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_1 +$
$4\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_1 + 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2v_1^2 -$
$4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 - 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2 +$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_1 - 4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 - 4\omega_{13}c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 +$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2^2v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}v_2 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 +$
$2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 - 2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2v_1^2 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 +$
$4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}v_2^2v_1 - 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 -$
$4\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_1 + 4\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}v_2^2v_1 -$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_2 - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2v_1^2 +$
$2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}v_2^2v_1 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_1 - 2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}v_2 +$
$9\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}v_2 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_1 + 4\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2^2v_1 -$
$4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}v_2v_1^2 + 2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19}v_2 + 4\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19}v_2$

$C_{39} = 4\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}v_1\omega_{16} + \omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} +$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} - 2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} - 2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_2^2\omega_{16} +$
$\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2 - 2\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2\omega_{16} - 2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16} +$
$2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} -$
$\omega_7^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1 + \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} - 2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16} -$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_2^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} + \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_2^2\omega_{16} + 2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2 +$
$2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} - 2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} + \omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1 - 2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 +$
$2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} + \omega_7^3v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16} - 2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16} -$
$2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2\omega_{16} +$
$2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2 + 2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_2^2v_1^2\omega_{16} -$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16} - \omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} -$
$2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_2^2\omega_{16} - 2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1^2\omega_{16} -$
$2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - \omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_2^2v_1\omega_{16} + 2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} -$
$2\omega_7^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} + \omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} -$
$\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_2^2\omega_{16} + 2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} + 2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} -$
$2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} - 2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} +$
$12\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + \omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2 -$
$8\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_1^2\omega_{16} +$
$\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1^2\omega_{16} - \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} + 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} -$

$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_2^2\omega_{16} + \omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_2^2\omega_{16} - \omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - \omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_2^2v_1^2\omega_{16} - \omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_1^2\omega_{16} +$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3 v_3\omega_{23}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1^2\omega_{16} + 2\omega_7^2 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1^2\omega_{16} +$
$2\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 2\omega_7^2 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 + 2\omega_7^2 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} -$
$2\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16} - 2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} -$
$\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 - 2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} - 2\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} -$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 2\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 8\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} -$
$2\omega_7^2 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - \omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_7^3 v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} -$
$2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 - 4\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1^2\omega_{16} - \omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^2 v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2\omega_{16} -$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2 - 2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2\omega_{16} +$
$\omega_7^3 v_3\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$4\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} - 8\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16} - 2\omega_7^2 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_1^2\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - \omega_7^3 v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} +$
$\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_7^2 v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2 +$
$2\omega_7^2 v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} + \omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - \omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16} -$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_1^2\omega_{16} - 2\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} + \omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} +$
$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} + 2\omega_7^3 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1^2\omega_{16} - 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1 + 2\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16} - 2\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1^2\omega_{16} -$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} + \omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} - 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} +$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_2^2\omega_{16} + \omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} + 4\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^2 v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 -$
$2\omega_7^3 v_3^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16} - 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16} - 4\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_{19}v_1\omega_{16} -$
$2\omega_7^2 v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16} + 2\omega_7^2 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1^2\omega_{16} + 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} + 2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} +$
$\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2 - \omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 + 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} -$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} - \omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_2^2v_1\omega_{16} +$
$\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_2^2\omega_{16} + 2\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} - 2\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} +$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_2^2\omega_{16} + 2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} - 2\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16} +$
$2\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16} - 2\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1^2\omega_{16} - \omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1^2\omega_{16} - 2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1^2\omega_{16} - 2\omega_7^3 v_3\omega_{23}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} -$
$\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1 + \omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^2 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} +$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_7^2 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 - 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_2^2\omega_{16} + \omega_7^3 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 + 4\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_{19}v_1\omega_{16} +$
$2\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16} + 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} +$
$\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2\omega_{16} - 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16} + 2\omega_7^2 v_3^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16} - 2\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} -$
$2\omega_7^3 v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 + \omega_7^3 v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} - \omega_7^3 v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} -$
$4\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16} + 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - \omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} +$
$2\omega_7^2 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 - 2\omega_7^2 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_2^2\omega_{16} + \omega_7^3 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2 + 4\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}v_1\omega_{16} +$
$2\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16} - 2\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + \omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} +$
$2\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16} + 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2\omega_{16} + 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_2^2v_1\omega_{16} +$
$\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2\omega_{16} - 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16} + 2\omega_7^2 v_3^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2 + \omega_7^3 v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} -$
$\omega_7^3 v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1 - 2\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1 +$
$2\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1\omega_{16} + \omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - \omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} - \omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16} - \omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2 -$
$2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_2^2v_1\omega_{16} + 2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - \omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2 - \omega_7^3 v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} + 2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_2^2\omega_{16} - 2\omega_7^2 v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2 -$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1^2\omega_{16} + \omega_7^3 v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2\omega_{16} + 2\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_2^2v_1^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$

$\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} v_1 \omega_{16} + 2\omega_7^2 v_3^2 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 \omega_{18} \omega_6^2 \omega_{19} v_1 \omega_{16} + \omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 v_1 \omega_{16} -$
$\omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{11} \omega_8^2 \omega_{18} \omega_6 \omega_{19} v_2^2 v_1 \omega_{16} - \omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 v_1 \omega_{16} + 2\omega_7^2 v_3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8^2 \omega_6^2 \omega_{19} v_1^2 \omega_{16} +$
$\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} v_1 \omega_{16} - \omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_{18} \omega_6 \omega_{19} v_1^2 \omega_{16} + 2\omega_7^2 v_3^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} v_1 -$
$2\omega_7^3 v_3 \omega_{23} \omega_{17} \omega_{11} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 v_1^2 \omega_{16} + 2\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{17} \omega_8^2 \omega_6^2 \omega_{19} v_1 \omega_{16} + \omega_7^3 v_3^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} v_1 \omega_{16} -$
$2\omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8^2 \omega_{18} \omega_6^2 v_2^2 v_1 \omega_{16} + 2\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8^2 \omega_{18} \omega_6 \omega_{19} v_2^2 \omega_{16} + 4\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_{18} \omega_6^2 \omega_{19} v_1 \omega_{16} -$
$2\omega_7^3 v_3 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 v_1^2 \omega_{16} + 2\omega_7^2 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} + 2\omega_7^3 v_3 \omega_{23} \omega_{17} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 v_1^2 \omega_{16} +$
$2\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{17} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} - 2\omega_7^2 v_3 \omega_{23} \omega_{17} \omega_{11} \omega_8 \omega_{18} \omega_6^2 \omega_{19} v_2^2 v_1^2 \omega_{16}$

$C_{40} = -12\omega_7^2 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} + 12\omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} + 12\omega_7^2 v_3^2 \omega_{23} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} +$
$12\omega_7^2 v_3^2 \omega_{23} \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 - 12\omega_7^3 v_3^2 \omega_{23} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} + 12\omega_7^2 v_3^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{16} -$
$24\omega_7^3 v_3 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 v_1 \omega_{16} - 24\omega_7^3 v_3 \omega_{23} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 v_1 \omega_{16} - 6\omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 +$
$24\omega_7^3 v_3 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 v_1 \omega_{16} - 24\omega_7^2 v_3 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 v_1 \omega_{16} + 24\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} -$
$12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} + 24\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_1 \omega_{16} - 12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} -$
$36\omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} - 12\omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} - 24\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5 \omega_{18} \omega_6 \omega_{19} \omega_{16} +$
$12\omega_7^3 v_3^2 \omega_{23} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} + 24\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_1 \omega_{16} + 12\omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} -$
$12\omega_7^3 v_3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} - 12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} + 12\omega_7^3 v_3 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 \omega_{16} +$
$6\omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} + 12\omega_7^2 v_3^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 - 12\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} +$
$12\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} + 12\omega_7^2 v_3^2 \omega_{23} \omega_{20} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} + 10\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} +$
$12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5 \omega_6^2 \omega_{19} \omega_{16} + 12\omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} + 12\omega_7^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} -$
$24\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_6^3 \omega_{19} v_1 \omega_{16} - 24\omega_7^2 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 + 12\omega_7^2 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} -$
$24\omega_7 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} - 12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} + 6\omega_7^3 v_3^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} -$
$24\omega_7^2 v_3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} + 12\omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{16} + 6\omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} +$
$12\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_6^2 \omega_{19} \omega_{16} + 12\omega_7^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} + 12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} -$
$24\omega_7^3 v_3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 + 24\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_1 \omega_{16} + 12\omega_7^2 v_3^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} -$
$\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} + 24\omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} - 6\omega_7^3 v_3^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} -$
$12\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} - 24\omega_7^2 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} + 12\omega_7^2 v_3^2 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} -$
$12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{16} - 12\omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} - 12\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 +$
$12\omega_7^3 v_3^2 c_s^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{16} + 12\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_6^3 \omega_{16} + 24\omega_7^3 v_3 \omega_{23} \omega_{20} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 \omega_{16} -$
$24\omega_7^3 v_3 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 v_1 \omega_{16} - 12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{16} - 12\omega_7^2 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 +$
$6\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_6^3 \omega_{19} \omega_{16} - 24\omega_7^3 v_3 \omega_{23} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_6^2 \omega_{19} v_2^2 v_1 \omega_{16} + 24\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_1 \omega_{16} +$
$24\omega_7^2 v_3 \omega_{23} \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 \omega_{16} + 12\omega_7 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} + 12\omega_7^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} -$
$6\omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} + 12\omega_7^3 v_3^2 \omega_{23} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_6^2 \omega_{19} v_2^2 \omega_{16} + 42\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} +$
$12\omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} + 6\omega_7^3 v_3^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} - 6\omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 -$
$12\omega_7^3 v_3^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} - 24\omega_7^2 v_3 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 - 12\omega_7^2 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} -$
$12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} - 24\omega_7^2 v_3 \omega_{23} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 v_1 \omega_{16} - 24\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_1 \omega_{16} +$
$6\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} + 12\omega_7^2 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} + 24\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} +$
$12\omega_7^3 v_3 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 \omega_{16} + 12\omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} - 12\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 v_1 -$
$6\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} - 12\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5 \omega_{18} \omega_6^3 \omega_{16} - 12\omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_6^2 \omega_{19} \omega_{16} -$
$24\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} - 24\omega_7^3 v_3 \omega_{23} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 \omega_{16} - 12\omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} -$
$24\omega_7^2 v_3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_1 \omega_{16} + 24\omega_7^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} - 12\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} -$
$12\omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{16} + 6\omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} - 6\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} -$
$24\omega_7^2 v_3 \omega_{23} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 \omega_{16} - 12\omega_7^2 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} + 24\omega_7^2 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} -$
$12\omega_7^3 v_3^2 \omega_{23} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_6^3 \omega_{19} v_2^2 \omega_{16} + 6\omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} - 18\omega_7^2 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} -$
$24\omega_7^2 v_3 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 \omega_{16} - 6\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} - 24\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} +$
$24\omega_7^3 v_3 \omega_{23} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 \omega_{16} + 24\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} + 18\omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6 \omega_{19} v_2^2 \omega_{16} -$
$24\omega_7^2 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} + 24\omega_7^2 v_3 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 \omega_{16} - 24\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} +$
$12\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5 \omega_{18} \omega_6 \omega_{19} \omega_{16} + 12\omega_7^2 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} + 24\omega_7^2 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} -$
$12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5 \omega_{18} \omega_6^3 \omega_{16} - 6\omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_6^3 \omega_{19} v_2^2 \omega_{16} + 12\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_1 \omega_{16} +$
$12\omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} + 24\omega_7 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} - 12\omega_7^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 -$
$6\omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} + 24\omega_7^2 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} - 12\omega_7^2 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} -$
$6\omega_7^3 v_3^2 \omega_{23} c_s^4 \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} - 12\omega_7^2 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} + 12\omega_7^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} +$
$12\omega_7^2 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} - 12\omega_7^2 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} + 12\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} +$
$12\omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} + 24\omega_7^3 v_3 \omega_{23} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 v_1 \omega_{16} + 24\omega_7^3 v_3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_6^3 \omega_{19} v_1 \omega_{16} +$
$12\omega_7^3 v_3 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 v_1 - 6\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_6^2 \omega_{19} \omega_{16} - 12\omega_7^2 v_3^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} +$
$24\omega_7^2 v_3 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 v_1 \omega_{16} - 24\omega_7^3 v_3 \omega_{23} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 v_1 \omega_{16} - 60\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} +$
$12\omega_7^2 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} + 24\omega_7 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} + 24\omega_7^3 v_3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_1 \omega_{16} -$
$12\omega_7^3 v_3^2 \omega_{23} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} - 12\omega_7^2 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} - 24\omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} +$
$12\omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 \omega_{16} - 6\omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_2^2 \omega_{16} - 6\omega_7^3 v_3^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_6^2 \omega_{19} v_2^2 \omega_{16} +$
$24\omega_7^2 v_3 \omega_{23} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} v_2^2 v_1 \omega_{16} - 12\omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5 \omega_6^3 \omega_{19} \omega_{16} + 12\omega_7^3 v_3^2 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} +$
$12\omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 \omega_5^2 \omega_{18} \omega_6 \omega_{19} v_2^2 \omega_{16} + 24\omega_7^2 v_3 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} - 12\omega_7^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 v_2^2 \omega_{16} -$
$12\omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_8^2 \omega_5^2 \omega_6^3 \omega_{19} \omega_{16} + 24\omega_7^2 v_3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} v_1 \omega_{16} + 12\omega_7^2 \omega_{23} c_s^4 \omega_{20} \omega_{11} \omega_8^2 \omega_5^2 \omega_{18} \omega_6^3 \omega_{19} \omega_{16} -$

$12\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 12\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} - 24\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1\omega_{16} +$
$12\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2^2\omega_{16} + 12\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_1\omega_{16} + 6\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}\omega_{16} +$
$12\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} + 12\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2 - 24\omega_7^2 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1\omega_{16} +$
$12\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2^2v_1\omega_{16} + 24\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1 - 6\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$12\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} + 12\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_2^2\omega_{16} +$
$12\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2^2\omega_{16} + 12\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} + 12\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_1\omega_{16} +$
$12\omega_7^2 v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_2^2\omega_{16} - 12\omega_7^2 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} - 6\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} +$
$12\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{16} + 24\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3v_1\omega_{16} + 12\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^3\omega_{19}\omega_{16} - 24\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_1\omega_{16} - 12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} -$
$18\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16} + 12\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} - 60\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} +$
$12\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{16} + 12\omega_7^2 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} + 12\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$6\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2^2\omega_{16} + 12\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{16} + 12\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1 -$
$12\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1\omega_{16} + 12\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16} + 12\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} -$
$24\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} + 12\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{16} - 24\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} +$
$6\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2 + 12\omega_7^3 v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_2^2\omega_{16} - 12\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} +$
$24\omega_7^2 v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1\omega_{16} - 24\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 12\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_2^2\omega_{16} -$
$12\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_2^2\omega_{16} + 6\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_7^2 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1 +$
$12\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} + 6\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} + 24\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_1\omega_{16} +$
$24\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_2^2v_1\omega_{16} - 6\omega_7^3 v_3^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_7^3 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_2^2v_1\omega_{16} +$
$24\omega_7^2 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1\omega_{16} + 12\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2 - 12\omega_7^2 v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} -$
$12\omega_7^3 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1\omega_{16} + 12\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} - 24\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1\omega_{16} -$
$6\omega_7^3 v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} + 24\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1\omega_{16} - 12\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}v_2^2\omega_{16} -$
$12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{16} + 6\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2^2\omega_{16} +$
$12\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} - 6\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_2^2\omega_{16} + 24\omega_7^3 v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1\omega_{16} -$
$18\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{16} + 36\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16} - 12\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} -$
$12\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2v_1\omega_{16} + 6\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} - 24\omega_7^3 v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2^2v_1\omega_{16} +$
$12\omega_7^3 v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1 - 12\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} + 12\omega_7^3 v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1\omega_{16} -$
$6\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2 - 12\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_2^2\omega_{16} - 12\omega_7^2 v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} -$
$12\omega_7^3 v_3^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{16} - 24\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} + 36\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{16} +$
$12\omega_7^2 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} + 12\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1 + 24\omega_7^3 v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2^2v_1\omega_{16} +$
$12\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{16} - 12\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} + 12\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{16} -$
$12\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 48\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} + 6\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} -$
$2\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} - 24\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}v_1\omega_{16} + 24\omega_7^2 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_1\omega_{16} +$
$12\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} - 24\omega_7^2 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_1\omega_{16} - 6\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} -$
$6\omega_7^3 v_3^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19}\omega_{16} - 12\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_1\omega_{16} - 12\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2^2\omega_{16} -$
$24\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6^3\omega_{19}\omega_{16} + 12\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2^2\omega_{16} -$
$24\omega_7^3 v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_1\omega_{16} + 6\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2 - 12\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19}\omega_{16} +$
$12\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} - 6\omega_7^3 v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2 + 6\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19}v_2^2\omega_{16} -$
$12\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3v_2^2\omega_{16} - 12\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_6^3\omega_{19}v_2^2\omega_{16} + 12\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19}\omega_{16}$

$C_{41} = -\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}\omega_{16}^2 - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 - 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 +$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16} - \omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{16}^2 - \omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 -$
$2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16}^2 + \omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}\omega_{16}^2 - \omega_7^3 v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} -$
$2\omega_7^3 v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_1^2\omega_{16}^2 + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 + \omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_1^2\omega_{16}^2 +$
$2\omega_7^2 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 - 3\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_7^3 v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 +$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 + \omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 2\omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 -$
$2\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 - 2\omega_7^2 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 - \omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 - 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 +$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}^2 + \omega_7^3 v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16}^2 - 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^3 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16}^2 - 2\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16}^2 - 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} -$
$\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 + 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 - 2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 + \omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 +$
$2\omega_7^3 v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 - 2\omega_7^2 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16}^2 - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1 + 2\omega_7^2 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 +$
$3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 - 2\omega_7^2 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 - 2\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16}^2 +$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 - 2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16}^2 + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 - 2\omega_7^3 v_3\omega_{23}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_1^2\omega_{16}^2 -$
$\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^2 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 -$
$2\omega_7^3 v_3\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16}^2 - 2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} - 2\omega_7^3 v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}\omega_{16}^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 -$
$2\omega_7^2 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 -$
$2\omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}^2 + \omega_7^3 v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} - \omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 +$
$\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^2 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 + 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 -$
$2\omega_7^3 v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 - 2\omega_7^3 v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 + \omega_7^3 v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 + \omega_7^3 v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}\omega_{16}^2 -$

$\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_{19}v_1\omega_{16}^2 - \omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 + \omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16}^2 - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 - 2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 -$
$2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 + \omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 + 2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} +$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 + 5\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 -$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16}^2 - 2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}\omega_{16}^2 - 2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 -$
$2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 - 6\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 -$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}^2 + 2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 -$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 + 2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} - 2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16}^2 - 6\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16}^2 +$
$2\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 + \omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16}^2 + \omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 +$
$2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 - 2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 + 2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{16}^2 +$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 + 2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 - \omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1^2\omega_{16}^2 - 2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1 - 2\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 + 2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16}^2 -$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_1\omega_{16}^2 - \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 - \omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} +$
$2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 + \omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} + \omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_1^2\omega_{16}^2 +$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{16}^2 + \omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 - 2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}\omega_{16}^2 +$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 - \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} - 2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 -$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 - 2\omega_7^2v_3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{16}^2 - \omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 - 2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{16}^2 +$
$2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 + 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 +$
$\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19}\omega_{16}^2 - 2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16} +$
$\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 + 2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{16}^2 - \omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19}v_1\omega_{16}^2 -$
$2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19}v_1\omega_{16}^2 + \omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 -$
$4\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 + \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16} - \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19}\omega_{16}^2 -$
$\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1^2\omega_{16}^2 + \omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 +$
$\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 - \omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 +$
$3\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 - \omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 - \omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 -$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19}\omega_{16}^2 + 2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1^2\omega_{16}^2 - 4\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{16}^2 +$
$2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 2\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{16}^2 - 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 +$
$2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + \omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 +$
$2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19}v_1\omega_{16}^2 + 2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 +$
$2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16}^2 - 2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{16}^2 -$
$2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2 - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}\omega_{16}^2 - 2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16}^2 + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2v_1\omega_{16}^2$

$C_{42} = -2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} - 12\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} -$
$\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} + 2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} + 2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} -$
$2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} + 4\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} - 14\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} +$
$4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} - 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2 -$
$4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2v_1\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} - 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1 -$
$2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} - 2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2 + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2v_1^2\omega_{16} -$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} + 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} + 4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}v_1\omega_{16} +$
$\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1^2\omega_{16} + 2\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} + 2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1^2\omega_{16} +$
$4\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1 - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2 -$
$2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} + 4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} + 9\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} -$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_1^2\omega_{16} + 4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_1^2\omega_{16} +$
$2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1 + 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} + 4\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} +$
$8\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - \omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} - 2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} +$
$4\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1 + 4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}v_1\omega_{16} -$
$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_1^2\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2\omega_{16} -$
$2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} - 2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2 +$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} - 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} -$
$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2v_2^2\omega_{16} - 2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2 -$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2v_1\omega_{16} - 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2 - 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} - 2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} + 2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} +$
$12\omega_7v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} + 2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} -$
$4\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2v_1^2\omega_{16} - 2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1 -$
$\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} - 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} + 2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} +$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} + 4\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1\omega_{16} -$
$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1 +$
$\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2 + 2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} +$
$8\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} - 4\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 4\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} -$
$2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} - 2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} + 8\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} +$
$4\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_1^2\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_1^2\omega_{16} -$

$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2\omega_{16} - 4\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} - 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} -$
$2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2v_2^2v_1^2\omega_{16} + 2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2\omega_{16} -$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_1\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2\omega_{16} + 4\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$4\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + \omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} - 2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} -$
$4\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} + 4\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2v_2^2v_1\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} -$
$2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} - 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2v_2^2\omega_{16} +$
$2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2 + 4\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} + 4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19}^2v_1\omega_{16} -$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} + \omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} - 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} +$
$2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} - 4\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} -$
$2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1^2\omega_{16} - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} - \omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} -$
$4\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} - 2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} + 4\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} + \omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2 - 2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} - 4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} - 12\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} +$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1 - 2\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} - \omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1^2\omega_{16} -$
$2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1^2\omega_{16} - 4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}v_1\omega_{16} + 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2v_1\omega_{16} -$
$4\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 4\omega_7v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} + 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1 -$
$12\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1\omega_{16} - 4\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} - 2\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} +$
$2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} + 4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1 - 4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} +$
$6\omega_7v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} + 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} - 4\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} +$
$\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} - 4\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1 + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2\omega_{16} -$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_1^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_1^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} -$
$2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2 + 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}v_1\omega_{16} - 2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} -$
$\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} + 2\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} - 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_{19}^2v_1\omega_{16} +$
$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} + 2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} + 2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} +$
$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2\omega_{16} + 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_1\omega_{16} -$
$2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2 + 2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} + \omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} +$
$2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} - \omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2 + 2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} -$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} + 2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} + 2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$4\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} + 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2v_1\omega_{16} +$
$2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} + 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} +$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} + 4\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} - 2\omega_7v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} +$
$4\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2v_1\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} - 8\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} +$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} - 4\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} - 2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} -$
$4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} + 2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} + 2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} +$
$2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} + 2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} -$
$4\omega_7^2v_3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} + 2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} - \omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} +$
$2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} + 4\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} + 2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2\omega_{16} +$
$2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2 + 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1\omega_{16} +$
$2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2 + 2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_1^2\omega_{16} + \omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2v_2^2v_1^2\omega_{16} -$
$2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1 - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} + 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2v_1^2\omega_{16} -$
$2\omega_7^3v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} - 4\omega_7v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} - 2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} -$
$2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} + \omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2 + 2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_1^2\omega_{16} -$
$4\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1\omega_{16} - 4\omega_7v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_1\omega_{16} + 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} +$
$2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2v_1^2\omega_{16} - 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} - \omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} +$
$2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} - 8v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} - 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1 +$
$2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16} + \omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2 - 4\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} +$
$2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_2^2\omega_{16} + 2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2 - 2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2v_2^2v_1\omega_{16} +$
$\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2 - \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_2^2\omega_{16} + 4\omega_7^2v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2v_1\omega_{16} +$
$\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_1^2\omega_{16} - 2\omega_7^3v_3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2v_1\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2v_1^2\omega_{16} +$
$4\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} + 4\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} + 4\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1\omega_{16} -$
$4\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} + \omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2\omega_{16} - 2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}v_2^2v_1^2\omega_{16} +$
$4\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1\omega_{16} + 2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_{16}$

$C_{43} = -12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16} + 6\omega_{10}^2\omega_7^3v_3^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2 - 6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16}^2 - 18\omega_{10}^2\omega_7^3c_s^4\omega_{19}\omega_{16}^2 +$
$12\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^3v_3^2\omega_{16}^2 + 6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{19}\omega_{16}^2 +$
$12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{16}^2 + 36\omega_{10}^2\omega_7^3c_s^4\omega_{16}^2 + 6\omega_{10}^2\omega_7^3v_3^2\omega_{19}\omega_{16}^2 - 18\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2 + 12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}v_2^2\omega_{16}^2 - 60\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2 +$
$6\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}\omega_{16} + 12\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19} + 6\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2 + 36\omega_{10}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{19}\omega_{16} + 9\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2 -$
$72\omega_{10}^2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16} + 12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} - 12\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{19}\omega_{16} - 12\omega_{10}^2\omega_7^3v_3^2\omega_{11}v_2^2\omega_{16}^2 - 18\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{19}\omega_{16}^2 -$
$24\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 - 45\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16} + 12\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{19}\omega_{16}^2 - 6\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2 + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{16}^2 -$
$36\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{16}^2 + 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{16}^2 - \omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 - 36\omega_{10}^2\omega_7^2c_s^4\omega_{11}\omega_{19}\omega_{16}^2 + 12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16} -$
$5\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2 + 12\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 + 36\omega_{10}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{16}^2 + 6\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2 + 6\omega_{10}^2\omega_7^3c_s^2\omega_{19}\omega_{16}^2 +$
$36\omega_{10}^2\omega_7^2c_s^4\omega_{11}\omega_{19}\omega_{16} + 18\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2 + 36\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 + 15\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16} + 12\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2 +$
$144\omega_{10}^2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16} - 6\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16} - 18\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2 - 12\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{19}\omega_{16} + 12\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16} +$
$18\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2 + 24\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2 - 36\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{16}^2 + 12\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19} -$

$24\omega_{10}^2\omega_7v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}+3\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}-6\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}\omega_{16}^2-42\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}-36\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{16}^2+$
$72\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-36\omega_{10}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{19}\omega_{16}^2+6\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2+6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}-15\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2-$
$36\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2-6\omega_{10}^2\omega_7^3v_3^2\omega_{11}\omega_{19}v_2^2\omega_{16}-12\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}+156\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2+$
$18\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}-6\omega_{10}^2\omega_7^3c_s^2\omega_{19}v_2^2\omega_{16}^2-6\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}-72\omega_{10}^2\omega_7v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}-12\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_2^2\omega_{16}^2+$
$36\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{16}^2-6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}-36\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{16}^2-12\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+6\omega_{10}^2\omega_7^3v_3^2\omega_{11}\omega_{19}\omega_{16}+12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{16}^2+$
$12\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}-12\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+36\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2+48\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}+36\omega_{10}^2\omega_7^2c_s^4\omega_{11}\omega_{16}^2-$
$18\omega_{10}^2\omega_7^3c_s^4\omega_{11}\omega_{19}\omega_{16}+12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2+24\omega_{10}^2\omega_7v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}-12\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{16}^2+12\omega_{10}^2\omega_7^3c_s^2v_2^2\omega_{16}^2-$
$12\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2+\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+3\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2+72\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2-12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}v_2^2\omega_{16}^2+$
$36\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}-12\omega_{10}^2\omega_7^3c_s^2\omega_{16}^2-108\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-18\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{11}\omega_{19}\omega_{16}+18\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}-$
$12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2\omega_{16}^2-12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2-12\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+24\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2+36\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{16}^2+$
$12\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}\omega_{16}^2+18\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}-36\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2+12\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{16}^2+27\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2+$
$12\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{19}v_2^2\omega_{16}+24\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16}+12\omega_{10}^2\omega_7^2v_3^2\omega_{11}v_2^2\omega_{16}^2-6\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-12\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}\omega_{16}-$
$36\omega_{10}^2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}-12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2-6\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}-24\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16}^2-3\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}-$
$12\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{16}^2+15\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}+54\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2-12\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2-36\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}+$
$18\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{11}\omega_{19}\omega_{16}^2-6\omega_{10}^2\omega_7^3v_3^2\omega_{19}v_2^2\omega_{16}^2-36\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{11}\omega_{16}^2-24\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}-12\omega_{10}\omega_7^3\omega_{23}c_s^2v_2^2\omega_{16}^2+$
$5\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-12\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{16}^2-18\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}+18\omega_{10}^2\omega_7^3c_s^4\omega_{11}\omega_{19}\omega_{16}^2-6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2+$
$36\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{16}^2+12\omega_{10}^2\omega_7^3v_3^2v_2^2\omega_{16}^2-9\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2+12\omega_{10}^2\omega_7^3v_3^2\omega_{11}\omega_{16}^2-12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{16}^2-$
$15\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}+12\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}-18\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-36\omega_{10}^2\omega_7^3c_s^4\omega_{11}\omega_{16}^2+6\omega_{10}\omega_7^3c_s^2\omega_{19}v_2^2\omega_{16}^2-$
$96\omega_{10}^2\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2-12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{16}^2-12\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-6\omega_{10}^2\omega_7^3v_3^2\omega_{11}\omega_{19}\omega_{16}^2-48\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}$

$C_{44}=-36\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}+18\omega_{10}^2\omega_7^3v_3^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2-12\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2-6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16}^2-6\omega_{10}^2\omega_7^3c_s^4\omega_{19}\omega_{16}^2+$
$60\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+12\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}+36\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2\omega_{16}^2-12\omega_{10}^2\omega_7^3v_3^2\omega_{16}^2+6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{19}\omega_{16}^2+12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{16}^2+$
$12\omega_{10}^2\omega_7^3c_s^4\omega_{16}^2+6\omega_{10}^2\omega_7^3v_3^2\omega_{19}\omega_{16}^2-6\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2+36\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}v_2^2\omega_{16}^2-5\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2+6\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}\omega_{16}+$
$12\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}+18\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2+12\omega_{10}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{19}\omega_{16}-48\omega_{10}^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+27\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2-$
$24\omega_{10}^2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}-12\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{19}\omega_{16}-36\omega_{10}^2\omega_7^3v_3^2\omega_{11}v_2^2\omega_{16}^2-6\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{19}\omega_{16}^2-24\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2-$
$15\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}+12\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{19}\omega_{16}^2-18\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2+12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{16}^2-12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{16}^2+$
$12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{16}^2-12\omega_{10}^2\omega_7^2c_s^4\omega_{11}\omega_{19}\omega_{16}^2+12\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}-15\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+12\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2+$
$12\omega_{10}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{16}^2+18\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+6\omega_{10}^2\omega_7^3c_s^2\omega_{19}\omega_{16}^2+12\omega_{10}^2\omega_7^2c_s^4\omega_{11}\omega_{19}\omega_{16}+6\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{19}\omega_{16}^2+36\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2+$
$15\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}+36\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2+48\omega_{10}^2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}-18\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}-18\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-$
$12\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{19}\omega_{16}+36\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}+54\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+72\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2-12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{16}^2+$
$36\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_2^2\omega_{16}^2-72\omega_{10}^2\omega_7v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}-6\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}-6\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}\omega_{16}^2-18\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}-$
$12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{16}^2+24\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-12\omega_{10}^2\omega_7^2v_3^2c_s^2\omega_{11}\omega_{19}\omega_{16}^2+6\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2+18\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}-$
$5\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2-108\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2-18\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{19}v_2^2\omega_{16}+60\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}+$
$18\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2+6\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}-18\omega_{10}^2\omega_7^3c_s^2\omega_{19}v_2^2\omega_{16}^2-24\omega_{10}^2\omega_7v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}-36\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_2^2\omega_{16}^2+$
$12\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{16}^2-6\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}-12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{16}^2-36\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+6\omega_{10}^2\omega_7^3v_3^2\omega_{11}\omega_{19}\omega_{16}+12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{16}^2-$
$12\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}-36\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+12\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2+144\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}+12\omega_{10}^2\omega_7^2c_s^4\omega_{11}\omega_{16}^2-$
$6\omega_{10}^2\omega_7^3c_s^4\omega_{11}\omega_{19}\omega_{16}+\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2+24\omega_{10}^2\omega_7v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}-12\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{16}^2+36\omega_{10}^2\omega_7^3c_s^2v_2^2\omega_{16}^2-36\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2-$
$\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2+24\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}^2-36\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}v_2^2\omega_{16}^2+12\omega_{10}^2\omega_7^3v_3^2\omega_{23}c_s^2\omega_{19}\omega_{16}-12\omega_{10}^2\omega_7^3c_s^2\omega_{16}^2-$
$36\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-6\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{11}\omega_{19}\omega_{16}+6\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}-36\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2\omega_{16}^2+24\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2-$
$36\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2+72\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2+12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{16}^2+12\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}\omega_{16}^2-102\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}-$
$12\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2+12\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{16}^2+9\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2+36\omega_{10}^2\omega_7^2v_3^2\omega_{11}\omega_{19}v_2^2\omega_{16}+24\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16}+$
$36\omega_{10}^2\omega_7^2v_3^2\omega_{11}v_2^2\omega_{16}^2-12\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}\omega_{16}-12\omega_{10}^2\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}-15\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}^2-6\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}-$
$24\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{19}\omega_{16}^2+30\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}-12\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{16}^2+6\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}+18\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2-$
$12\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2-12\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}+6\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{11}\omega_{19}\omega_{16}^2-18\omega_{10}^2\omega_7^3v_3^2\omega_{19}v_2^2\omega_{16}^2-12\omega_{10}^2\omega_7^3v_3^2c_s^2\omega_{11}\omega_{16}^2-$
$72\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}-36\omega_{10}\omega_7^3\omega_{23}c_s^2v_2^2\omega_{16}^2+5\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-36\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{16}^2+18\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}+$
$6\omega_{10}^2\omega_7^3c_s^4\omega_{11}\omega_{19}\omega_{16}^2-18\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{19}v_2^2\omega_{16}^2+12\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{16}^2+36\omega_{10}^2\omega_7^3v_3^2v_2^2\omega_{16}^2-9\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2+12\omega_{10}^2\omega_7^3v_3^2\omega_{11}\omega_{16}^2-$
$12\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{16}^2-45\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}+36\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16}-6\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-12\omega_{10}^2\omega_7^3c_s^4\omega_{11}\omega_{16}^2+$
$18\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}v_2^2\omega_{16}^2-12\omega_{10}^2\omega_{23}c_s^4\omega_{11}\omega_{19}\omega_{16}^2-12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{16}^2-6\omega_{10}^2\omega_7^3v_3^2\omega_{11}\omega_{19}\omega_{16}^2-48\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}$

$C_{45}=-24\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}\omega_{16}^2-12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2+3\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2-66\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}-36\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}-$
$12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}-24\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}-12\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}^2-12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}+18\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2-$
$72\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2+12\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2+6\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}-12\omega_{10}\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2-24\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}v_2^2\omega_{16}^2-$
$84\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2+72\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2-24\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}^2+36\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}-12\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}+$
$24\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}-12\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2+12\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}^2\omega_{16}^2+12\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}^2+12\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2-$
$12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2+12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16}+24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2-18\omega_{10}^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2-132\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2-$
$96\omega_{10}\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2-24\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2-24\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19}^2\omega_{16}^2-12\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2+24\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}\omega_{16}^2+$
$12\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}+66\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}+24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}\omega_{16}^2+24\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2+12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16}^2+$
$4\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}^2+24\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}\omega_{16}^2-12\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2+12\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}^2+12\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2+$
$24\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2-24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16}-42\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2+84\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2-24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{16}^2+$
$12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2+6\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2-12\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2+12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2+12\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16}^2-$
$12\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}^2\omega_{16}^2-48\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2+12\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2-24\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2-24\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}\omega_{16}+24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{16}^2+$
$48\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16}^2-12\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}^2v_2\omega_{16}-24\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}\omega_{16}^2+24\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{16}^2-36\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}+$
$\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}^2-12\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}-24\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2-\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2-66\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2-$
$12\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2+12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16}-6\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}+6\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16}+24\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}v_2^2\omega_{16}^2+$

$$12\omega_{10}\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}^2 + 90\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 4\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 24\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16} + 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 -
18\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} + 156\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 - 18\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16}^2 + 18\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16} +
24\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 60\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2 + 36\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 24\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}^2 -
6\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16}^2 - 12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16}^2 + 12\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}^2\omega_{16} - 24\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 24\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}v_2^2\omega_{16}^2$$

$$C_{46} = 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_6^3\omega_{22} - 36\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2 - 6v_3^2\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2 + 12\omega_{13}c_s^4\omega_{11}^3\omega_6^2\omega_{22} + 12\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 + 6\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} +
12\omega_{13}\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 + 6v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}v_3^2\omega_{11}^3\omega_{18}\omega_6^3v_1^2 - 84\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} + 108\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22}v_1^2 -
2\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 30\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} + 24\omega_{13}\omega_{11}^3\omega_{18}\omega_6\omega_{22}v_1^2 + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 6\omega_{13}\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2 -
12\omega_{13}c_s^2\omega_{18}^2\omega_6^3\omega_{22} + 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} + 18\omega_{13}\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 36\omega_{13}c_s^2\omega_{11}^3\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3 +
12\omega_{13}v_3^2\omega_{11}^3\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 36\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_6^3\omega_{22}v_1^2 + 18\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3 - 36c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} -
36\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3v_1^2 - 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} - 18c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2 + 12c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} +
12\omega_{13}\omega_{11}^3\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3 + 6c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 42\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} - 72\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 96\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_{22} -
12\omega_{13}v_3^2\omega_{11}^2\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 - 36\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}v_1^2 + 18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}v_3^2\omega_{11}^3\omega_{18}\omega_6^2v_1^2 -
12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_6^2\omega_{22} + 12\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} + 36\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3v_1^2 - 18\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 +
12v_3^2\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 - 12\omega_{13}c_s^4\omega_{11}^3\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_6^3v_1^2 + 180\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} - 6c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 72\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 +
\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} + 36c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 + 12\omega_{13}c_s^2\omega_{11}^2\omega_6^3\omega_{22} + 12\omega_{13}\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}v_1^2 + 36\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2v_1^2 - 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} -
12c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2 + 6\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 + 18c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 48\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} - 36\omega_{13}c_s^2\omega_{11}^2\omega_6^3\omega_{22}v_1^2 +
18c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 36\omega_{13}v_3^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} + 6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 42\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} +
36\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 + 36\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_6^3 + 72\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}v_1^2 + 6\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_{11}\omega_{18}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_{11}^3\omega_{18}\omega_6^2v_1^2 +
6v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 88\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 + 12\omega_{13}c_s^2\omega_{11}^3\omega_6^2\omega_{22} - 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} -
12\omega_{13}v_3^2\omega_{11}^3\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3 - 12\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 12v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 + 12\omega_{13}\omega_{11}^2\omega_6^3\omega_{22}v_1^2 -
12\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 + 36\omega_{13}c_s^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 36\omega_{13}c_s^4\omega_{18}^2\omega_6^3\omega_{22} + 24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}v_3^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 -
36\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 + 2\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 36\omega_{13}c_s^2\omega_{11}^3\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 6\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 -
12\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 - 12\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 - 6\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} - 24\omega_{13}\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 18\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 -
12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} - 12\omega_{13}\omega_{11}^2\omega_{18}\omega_6^3v_1^2 - 6v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_6^3\omega_{22} - 36\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}v_3^2\omega_{11}^3\omega_{18}\omega_6\omega_{22}v_1^2 +
12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2 - 12v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 + 6\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2 + 12\omega_{13}v_3^2c_s^2\omega_{18}^2\omega_6^3\omega_{22} + 18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} -
72\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22}v_1^2 - 12\omega_{13}v_3^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 36c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 54\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 36\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^3 -
\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} - 18c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3 - 12\omega_{13}c_s^2\omega_{11}^3\omega_6^3\omega_{22} - 36\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}\omega_{11}^3\omega_{18}\omega_6^3v_1^2 - 36\omega_{13}\omega_{11}^3\omega_{18}\omega_6^2\omega_{22}v_1^2 +
5\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} - 12v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} + 36c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2 + 36\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^2 + 12\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_6^3\omega_{22} +
12\omega_{13}c_s^4\omega_{11}^2\omega_6^3\omega_{22} + 150\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 6\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3 + 18\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} +
6\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2 - 12\omega_{13}\omega_{11}^3\omega_6^3\omega_{22}v_1^2 + 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}v_1^2 - 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 18\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2$$

$$C_{47} = 5\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 5\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 - 24\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 8\omega_{13}^2c_s^2\omega_{11}^3\omega_9\omega_6^3\omega_{22} -
5\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3\omega_{22} - 4\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} + 4\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - \omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 4\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 + 2\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} +
\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 9\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2\omega_{22} - 4\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 + 26\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6\omega_{22} + 4\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 9\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2\omega_{22} -
\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 2\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 + \omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 4\omega_{13}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 4\omega_{13}^2v_3^2\omega_{11}^3\omega_9\omega_6^3\omega_{22} - 4\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3 +
3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6\omega_{22} + 11\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2\omega_{22} + 4\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2 - 4\omega_{13}^2v_3^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} -
2\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6\omega_{22} - 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 8\omega_{13}^2c_s^2\omega_{11}^3\omega_9\omega_6^2\omega_{22} + 8\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} -
4\omega_{13}^2v_3^2\omega_{11}^3\omega_9\omega_6^2\omega_{22} - 8\omega_{13}^2c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} + 3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 4\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2 - 3\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 3\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3\omega_{22} -
3\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3\omega_{22} - 4\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3 - 2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 15\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 4\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} +
12\omega_{13}^2c_s^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 + 2\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} - 2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 4c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 2\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} -
\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 4\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} - 4\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 4\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 4\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 - 4\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} -
4\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 - 7\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 7\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + \omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 6\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9\omega_6\omega_{22} -
\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 2\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 - 4\omega_{13}^2\omega_{11}^3\omega_9\omega_6^3\omega_{22} + 4\omega_{13}^2v_3^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 4\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 - 6\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}\omega_9\omega_6\omega_{22} -
2\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} - 8\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 6\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9\omega_6\omega_{22} - 2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 + 13\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 4\omega_{13}^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} +
2\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 4\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2 - 2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 2\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 8\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6\omega_{22} +
4\omega_{13}^2\omega_{11}^3\omega_9\omega_6^2\omega_{22} - 8\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 2\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 16\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_{22} - 2\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 - 6\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} +
2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 2\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} - 2\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 4\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3 + 4\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2$$

$$C_{48} = -24\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_6^3\omega_{22} - 12\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2 - 18v_3^2\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2 + 36\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} +
12\omega_{13}\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 + 18v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 36\omega_{13}v_3^2\omega_{11}^3\omega_{18}\omega_6^3v_1^2 - 12\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} + 36\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22}v_1^2 -
18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 12\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} + 24\omega_{13}\omega_{11}^3\omega_{18}\omega_6\omega_{22}v_1^2 - 48\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_{22} + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 +
60\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 6\omega_{13}\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2 + 72\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} + 18\omega_{13}\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{11}^3\omega_6^3\omega_{22}v_1^2 +
36\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3 + 36\omega_{13}v_3^2\omega_{11}^3\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} - 6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 36\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_6^3\omega_{22}v_1^2 +
6\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3 - 12c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3v_1^2 - 72\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 42\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} -
6c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2 + 12c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 6\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 12\omega_{13}\omega_{11}^3\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3 + 6c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 24\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} -
24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_{22} - 36\omega_{13}v_3^2\omega_{11}^2\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 - 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22}v_1^2 - 24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}v_1^2 +
180\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 36\omega_{13}v_3^2\omega_{11}^3\omega_{18}\omega_6^2v_1^2 + 24\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_6^2\omega_{22} + 12\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 + 72\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3v_1^2 +
24\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} - 36\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 + 36v_3^2\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 + 36\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_6^3v_1^2 + 18\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} - 6c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} +
24\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 + 12c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 + 12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2v_1^2 + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} -
12c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2 + 18\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 + 6c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^2\omega_6^3\omega_{22}v_1^2 +
6c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 108\omega_{13}v_3^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22}v_1^2 - 12\omega_{13}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 +
12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_6^3 + 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}v_1^2 + 18\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 12\omega_{13}\omega_{11}\omega_{18}\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}\omega_{11}^3\omega_{18}\omega_6^2v_1^2 + 18v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} -
4\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 36\omega_{13}v_3^2\omega_{11}^3\omega_6^2\omega_{22}v_1^2 - 36\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3 + 18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} +$$

$36v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 + 60\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} + 12\omega_{13}\omega_{11}^2\omega_6^3\omega_{22}v_1^2 - 36\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 + 12\omega_{13}c_s^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 +$
$24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 + 36\omega_{13}v_3^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^3\omega_6^2\omega_{22}v_1^2 -$
$12\omega_{13}\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 18\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3v_1^2 - 12\omega_{11}^3\omega_{18}^2\omega_6^2v_1^2 - 36\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 + 78\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} -$
$24\omega_{13}\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}v_1^2 - 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 54\omega_{13}v_3^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 84\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} - 12\omega_{13}\omega_{11}^2\omega_{18}\omega_6^3v_1^2 - 18v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 +$
$24\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}v_1^2 - 72\omega_{13}v_3^2\omega_{11}^3\omega_{18}\omega_6\omega_{22}v_1^2 - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} + 36\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2 -$
$36v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 + 18\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2 - 144\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 24\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22}v_1^2 - 36\omega_{13}v_3^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}v_1^2 -$
$18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 12c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_1^2 - 18\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^3 - 108\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} - 6c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3 -$
$12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}v_1^2 + 12\omega_{13}\omega_{11}^3\omega_{18}\omega_6^3v_1^2 - 36\omega_{13}\omega_{11}^3\omega_{18}\omega_6^2\omega_{22}v_1^2 - \omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} - 36v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 84\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} +$
$12c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2 + 12\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^2 + 24\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 6\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3 - 132\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} +$
$6\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2 - 12\omega_{13}\omega_{11}^3\omega_6^3\omega_{22}v_1^2 + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}v_1^2 + 72\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}v_1^2 - 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 6\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3v_1^2$

$C_{49} = \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2 + \omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2v_3^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 -$
$\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2 - 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7^2v_3^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2 - 3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} -$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2 - 3\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 + \omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$\omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7v_3^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7^2c_s^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 3\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 3\omega_7^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2 +$
$\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - 3\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - 3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2 + \omega_7^2v_3^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + 3\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2 +$
$\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19} - 3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - \omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + 3\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$
$v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 3\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2 - \omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - \omega_7^2v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$
$\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - \omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^2v_3^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$3\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 + 3\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2 +$
$2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 + 3\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} -$
$\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 + 2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 3\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - \omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 -$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - \omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2 -$
$\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19} - 3\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 -$
$\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19} + \omega_7^2v_3^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2 - 3\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 +$
$\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 + \omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - 3\omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7v_3^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$
$\omega_7v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 + 3\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 +$
$\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} + \omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 +$
$\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 3\omega_7c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 -$
$3\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - \omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$
$\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 3c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_6^2\omega_{19}^2 -$
$\omega_7^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - \omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_6^2\omega_{19}^2 - \omega_7^2v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2 -$
$2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 3\omega_7^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 + 2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2 + 6\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2 - 9\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 + 3\omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - \omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} -$
$v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$
$2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - \omega_7^2v_3^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + 3\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2 - \omega_7^2v_3^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2 - \omega_7^2v_3^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2$

$C_{50} = 6c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 2\omega_7^2v_3^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 +$
$2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 - 11\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 -$
$2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3 + 4\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^3\omega_{19}^2 + 2\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 -$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 8\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_{19}^2 + 2\omega_7c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} +$
$8\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 5\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 +$
$2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3 + \omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$12\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 +$
$2\omega_7^2v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^3\omega_{19}^2 - 2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 4\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$3\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 2\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 - 2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} -$
$2\omega_7^2v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + \omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 5\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 9\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 +$
$\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7^2v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 + 2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 - 8\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6\omega_{19}^2 +$
$6\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3 - 3\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 - \omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 2\omega_7^2v_3^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$3\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 11\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3 + 2\omega_7c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 -$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^3\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2 -$
$2\omega_7^2v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 4\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 -$
$3\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^3\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 -$
$2\omega_7\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 13\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 4\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 +$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 4\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 4c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} +$
$2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + \omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$9\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7v_3^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 -$
$6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3 + 2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_7v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 +$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 3\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 15\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 +$

$$2\omega_7^2 c_s^2 \omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^3\omega_{19}^2 - 2\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$$
$$2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 2\omega_7^2 c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 6\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 3\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} +$$
$$2\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3 + 2\omega_7^2 c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 - 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 4\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 +$$
$$2\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^3\omega_{19}^2 + 2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3 + 4\omega_7^2 v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 6c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 15\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 +$$
$$\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 4\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$$
$$2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 9\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 2\omega_7 v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3 - 8\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$$
$$6\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3 - 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 + 2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 +$$
$$2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - \omega_7 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$$
$$6\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^3\omega_{19}^2 + 2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 4c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$$
$$4\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 - 2\omega_7^2 c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 2\omega_7^2 v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 2\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 +$$
$$8\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2 v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 - 2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 + 2\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^3\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2$$

$C_{51} =$
$$2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3 v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_7^3 v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$$
$$2\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_{19}^2 - 8\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^2 v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$$
$$\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 11\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 6\omega_7^3 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_{19}^2 - 4\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_{19}^2 -$$
$$15\omega_7^3 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$$
$$\omega_7^3 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3 v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} +$$
$$3\omega_7^3 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7^3 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^3 c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} +$$
$$4\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 3\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 3\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_7^3 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} -$$
$$2\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3 c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6^2\omega_{19}^2 + 4\omega_7^3 v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$$
$$3\omega_7^3 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 3\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 4\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 +$$
$$2\omega_7^3 c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 2\omega_7^3 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 3\omega_7^3 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 -$$
$$8\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6\omega_{19}^2 + 6\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 6\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6\omega_{19}^2 -$$
$$2\omega_7^3 v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7^3 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - \omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7^2 v_3^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$$
$$2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_{19}^2 - 2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 15\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$$
$$3\omega_7^3 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7^3 v_3^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 4\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 -$$
$$2\omega_7^3 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 3\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 6\omega_7^3 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2\omega_7^3 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$$
$$2\omega_7^2 v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3 c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7^3 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3 v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$$
$$2\omega_7^3 c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_7^3 v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 13\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3 v_3^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$$
$$4\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^3 c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$$
$$2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3 c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 9\omega_7^3 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$$
$$2\omega_7^3 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} - \omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 2\omega_7^3 c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 +$$
$$4\omega_7^3 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 2\omega_7^3 v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 -$$
$$2\omega_7^2 c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 4\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - \omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$$
$$2\omega_7^3 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6\omega_{19}^2 - 2\omega_7^3 c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6\omega_{19}^2 - 9\omega_7^3 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 -$$
$$2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 11\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^3 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$$
$$2\omega_7^3 v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 6\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 12\omega_7^3 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$$
$$2\omega_7^3 v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 5\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$$
$$6\omega_7^3 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7^3 v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 8\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 -$$
$$5\omega_7^3 v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3 v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^3 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 -$$
$$2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_{19}^2 + 4\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - \omega_7^3 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$$
$$2\omega_7^3 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7^3 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_{19}^2 - 4\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 4\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$$
$$2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 9\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7^3 v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$$
$$2\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 6\omega_7^3 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$$
$$2\omega_7^3 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_{19}^2 - 2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_{19}^2 - 2\omega_7^3 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 8c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$$
$$2\omega_7^3 c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 8\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7 v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}$$

$$C_{52} = \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2 + \omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 3\omega_7^2 v_3^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 -$$
$$3\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + 3\omega_7^2 v_3^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2 - c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} -$$
$$\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2 - \omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 + 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 +$$
$$\omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 3\omega_7^2 v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 + 6\omega_7 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7^2 c_s^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 +$$
$$2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2 c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 9\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2 c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2 +$$
$$\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - \omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - \omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2 + 3\omega_7^2 v_3^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2 +$$
$$\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19} - \omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 3\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$$
$$3v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2 - \omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$$
$$3\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - \omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2 + 6\omega_7^2 v_3^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 +$$
$$\omega_7^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 + \omega_7^2 c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2 +$$
$$2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} -$$
$$3\omega_7 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 + 6\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + 6\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2 c_s^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - \omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 -$$
$$\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2 - 3\omega_7 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - \omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2 -$$
$$\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19} - \omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 -$$
$$3\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19} + 3\omega_7^2 v_3^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2 - \omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 +$$
$$\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 + \omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - \omega_7 c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 + 3\omega_7 v_3^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2 c_s^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$$

$3\omega_7 v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 + 3\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 +$
$3\omega_7 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} + 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 +$
$3\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7 c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - \omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$
$3\omega_7 v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2 c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_6^2\omega_{19}^2 -$
$\omega_7^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2 - 3\omega_7 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_6^2\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + 3\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2 -$
$2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - \omega_7^2 c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 + 6\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$
$\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2 + 2\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2 - 3\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 + \omega_7 c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 3\omega_7^2 v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} -$
$3v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 3\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7 v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$
$6\omega_7^2 v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2 - 3\omega_7^2 v_3^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 6\omega_7^2 v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2$

$C_{53} = 6\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} - 24\omega_7 v_3^2\omega_{23}\omega_{11}^3\omega_{19} v_2^2\omega_{16} + 6\omega_7^3\omega_{11}^3\omega_{19}^2 v_2^2 - 12\omega_7 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 12\omega_7^2\omega_{11}^3\omega_{19}^2 v_2^2\omega_{16} -$
$12\omega_7^2 v_3^2\omega_{23} c_s^2\omega_{11}^3\omega_{16} + 12\omega_7^3\omega_{23} c_s^2\omega_{11}\omega_{19}\omega_{16} - 12\omega_7^3\omega_{23}\omega_{19}^2 v_2^2\omega_{16} - 12\omega_7^2 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_7^3\omega_{11}^3\omega_{19} v_2^2\omega_{16} + 36\omega_7^2 c_s^4\omega_{11}^3\omega_{19}^2 +$
$36\omega_7^2 c_s^4\omega_{11}^3\omega_{19}\omega_{16} + 6\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + \omega_7^3 v_3^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 12\omega_7^3 v_3^2\omega_{23} c_s^2\omega_{19}^2\omega_{16} + 18\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 5\omega_7^3\omega_{23} c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} +$
$150\omega_7^2\omega_{23} c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} + 6\omega_7^2 v_3^3\omega_{11}^3\omega_{19}^2 v_2^2\omega_{16} + 18\omega_7^3 c_s^2\omega_{11}^3\omega_{19}^2 v_2^2\omega_{16} + 12\omega_7^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 36\omega_7^2 c_s^2\omega_{11}^3\omega_{19}^2 v_2^2 + 2\omega_7^3\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{11}^3\omega_{19} v_2^2\omega_{16} - 36\omega_7^3\omega_{23} c_s^2\omega_{11}^2 v_2^2\omega_{16} + 12\omega_7^3\omega_{23} c_s^2\omega_{11}^2\omega_{16} - 36\omega_7^2\omega_{23} c_s^2\omega_{11}^3 v_2^2\omega_{16} + 12\omega_7\omega_{23} c_s^4\omega_{11}^3\omega_{19}\omega_{16} + 18\omega_7^3\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} -$
$72\omega_7\omega_{23} c_s^2\omega_{11}^3\omega_{19} v_2^2\omega_{16} + 18\omega_7^3 c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} - 12\omega_7^2 v_3^2\omega_{23}\omega_{11}^3 v_2^2\omega_{16} - 12\omega_7^3 v_3^2\omega_{23}\omega_{11}^2 v_2^2\omega_{16} + 12\omega_7^2 v_3^2 c_s^2\omega_{11}^3\omega_{19}\omega_{16} + 12\omega_7^3 v_3^2 c_s^2\omega_{11}^2\omega_{19}\omega_{16} +$
$24\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} + 6\omega_7^3 c_s^2\omega_{11}^3\omega_{19}^2 - 12\omega_7^3\omega_{23} c_s^4\omega_{11}^3\omega_{16} + 18\omega_7^3\omega_{23} c_s^4\omega_{11}^2\omega_{19}^2 - 96\omega_{23} c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} + 12\omega_7^3 c_s^2\omega_{11}^3\omega_{19}\omega_{16} -$
$12\omega_7^3\omega_{23}\omega_{11}^3 v_2^2\omega_{16} - 72\omega_7^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} - 12\omega_7\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 18\omega_7^3 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 42\omega_7^3\omega_{23} c_s^4\omega_{11}^2\omega_{19}\omega_{16} -$
$18\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} - 42\omega_7^2\omega_{23} c_s^4\omega_{11}^3\omega_{19}\omega_{16} - 24\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} v_2^2\omega_{16} - 24\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} - 12\omega_7^2 c_s^2\omega_{11}^3\omega_{19}^2 - 12\omega_7^3 v_3^2\omega_{23}\omega_{11}\omega_{19} v_2^2\omega_{16} -$
$12\omega_7 v_3^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}\omega_{16} - 6\omega_7^3 v_3^2 c_s^2\omega_{11}^3\omega_{19}^2 + 36\omega_7^2 c_s^2\omega_{11}^3\omega_{19} v_2^2\omega_{16} + 12\omega_7^3\omega_{23} c_s^4\omega_{11}^2\omega_{16} + 6\omega_7^3 v_3^2 c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} - 6\omega_7^3 v_3^2\omega_{11}^3\omega_{19}^2 v_2^2 +$
$12\omega_7^2 v_3^2\omega_{11}^3\omega_{19} v_2^2\omega_{16} - 36\omega_7^3\omega_{23} c_s^4\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_7^2\omega_{11}^3\omega_{19}^2 v_2^2 + 6\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2 - 24\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} - 12\omega_7^3 v_3^2\omega_{23} c_s^2\omega_{11}\omega_{19}^2\omega_{16} -$
$6\omega_7^3 v_3^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} + 12\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2 + 6\omega_7^3\omega_{23} c_s^2\omega_{11}^3\omega_{19}\omega_{16} - 84\omega_7\omega_{23} c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_7^2 v_3^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} - 6\omega_7^3\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 -$
$12\omega_7^3\omega_{23} c_s^2\omega_{11}^3\omega_{16} - 18\omega_7^3 c_s^4\omega_{11}^3\omega_{19}^2 - 12\omega_7^3\omega_{11}^2\omega_{19} v_2^2\omega_{16} + 18\omega_7^3\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 v_2^2 - 36\omega_7^3\omega_{23} c_s^2\omega_{11}\omega_{19} v_2^2\omega_{16} + 36\omega_7^3 c_s^4\omega_{11}^2\omega_{19}\omega_{16} +$
$12\omega_7^2 c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 12\omega_7^3\omega_{23} c_s^4\omega_{11}\omega_{19}\omega_{16} + 36\omega_7^3 c_s^2\omega_{11}^2\omega_{19} v_2^2\omega_{16} + 12\omega_7^2 v_3^2 c_s^2\omega_{11}^3\omega_{19}^2 - 6\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} - 12\omega_7^3 v_3^2 c_s^2\omega_{11}^3\omega_{19}\omega_{16} +$
$12\omega_7^3 v_3^2\omega_{23}\omega_{11}^3 v_2^2\omega_{16} - 36\omega_7^2\omega_{23} c_s^2\omega_{11}^2\omega_{19} v_2^2\omega_{16} - 12\omega_7^3 v_3^2\omega_{23} c_s^2\omega_{11}\omega_{19}\omega_{16} - 36\omega_7^3\omega_{23} c_s^2\omega_{11}^3\omega_{19} v_2^2\omega_{16} + 72\omega_7\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} +$
$36\omega_7^3\omega_{23} c_s^2\omega_{11}^3 v_2^2\omega_{16} - 36\omega_7^2\omega_{23}\omega_{11}^3\omega_{19} v_2^2\omega_{16} - 18\omega_7^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 36\omega_7^2 c_s^2\omega_{11}^3\omega_{19}^2 v_2^2\omega_{16} - \omega_7^3\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} -$
$18\omega_7^3 v_3^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} - 12\omega_7^2 c_s^2\omega_{11}^3\omega_{19}\omega_{16} - 18\omega_7^3 c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} + 36\omega_7^3\omega_{23} c_s^4\omega_{19}^2\omega_{16} + 18\omega_7^2 v_3^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}\omega_{16} + 12\omega_7^2\omega_{23}\omega_{11}^3 v_2^2\omega_{16} +$
$12\omega_7^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_7^3 v_3^2\omega_{23}\omega_{11}^3\omega_{19} v_2^2\omega_{16} - 12\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19} v_2^2\omega_{16} + 12\omega_7\omega_{23} c_s^2\omega_{11}^3\omega_{19}\omega_{16} - 2\omega_7^3 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 6\omega_7^3 c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} +$
$24\omega_7 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} + 12\omega_7^2\omega_{23} c_s^2\omega_{11}^3\omega_{16} - 6\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2 - 6\omega_7^3\omega_{23} c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_7^2 v_3^2\omega_{11}^3\omega_{19}^2 v_2^2\omega_{16} - 88\omega_7^2\omega_{23} c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} -$
$12\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 12\omega_7^2 v_3^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 6\omega_7^3\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} - 54\omega_7^3\omega_{23} c_s^2\omega_{11}\omega_{19}^2 v_2^2\omega_{16} + 6\omega_7^3 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_7^3 v_3^2\omega_{11}^3\omega_{19} v_2^2\omega_{16} +$
$12\omega_7^3 v_3^2\omega_{23} c_s^2\omega_{11}^3\omega_{16} + 12\omega_7^2 v_3^2\omega_{11}^3\omega_{19}^2 v_2^2 - 18\omega_7^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}\omega_{16} - 18\omega_7^3\omega_{23} c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 36\omega_7^3 c_s^4\omega_{11}^3\omega_{19}\omega_{16} - 36\omega_7^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 v_2^2 -$
$12\omega_7^2\omega_{11}^3\omega_{19} v_2^2\omega_{16} + 24\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19} v_2^2\omega_{16} + 12\omega_7^3 v_3^2\omega_{23}\omega_{19}^2 v_2^2\omega_{16} + 18\omega_7^2 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 180\omega_7\omega_{23} c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} +$
$36\omega_7^2 v_3^2\omega_{23}\omega_{11}^3\omega_{19} v_2^2\omega_{16} - 12\omega_7^3 v_3^2\omega_{11}^3\omega_{19} v_2^2\omega_{16} - 48\omega_7^2\omega_{23} c_s^4\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_7^2 v_3^2 c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} - 6\omega_7^3 v_3^2 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{11}\omega_{19} v_2^2\omega_{16} - 12\omega_7^3\omega_{23} c_s^2\omega_{19}^2\omega_{16} + 36\omega_7^3\omega_{23} c_s^2\omega_{19}^2 v_2^2\omega_{16} - 12\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2 - 6\omega_7^3\omega_{11}^3\omega_{19}^2 v_2^2\omega_{16} + 36\omega_7^2\omega_{23} c_s^2\omega_{11}\omega_{19}^2 v_2^2\omega_{16} +$
$12\omega_7^2\omega_{23} c_s^4\omega_{11}^3\omega_{16} + 108\omega_7^2\omega_{23} c_s^2\omega_{11}^3\omega_{19} v_2^2\omega_{16} - 36\omega_7^2\omega_{23} c_s^4\omega_{11}^2\omega_{19}^2 - 12\omega_7^3 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{16} + 72\omega_7^3\omega_{23} c_s^2\omega_{11}^2\omega_{19} v_2^2\omega_{16} - 36\omega_7^3 c_s^2\omega_{11}^3\omega_{19} v_2^2\omega_{16} +$
$12\omega_7^3\omega_{23} c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 24\omega_7\omega_{23}\omega_{11}^3\omega_{19} v_2^2\omega_{16} + 12\omega_7^3\omega_{23}\omega_{11}^2 v_2^2\omega_{16} - 6\omega_7^3 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 6\omega_7^3\omega_{23} c_s^2\omega_{11}^3\omega_{19}\omega_{16} - 12\omega_7^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} -$
$6\omega_7^3\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 2\omega_7^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 4\omega_{10}\omega_7^3 v_3^2\omega_{11}^3\omega_{19}\omega_{16}^2 - 6\omega_{10}\omega_7 v_3^2\omega_{23}\omega_{11}^3\omega_{19}\omega_{16}^2 - 4\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{11}^3\omega_{19}^2\omega_{16}^2 -$
$3\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 - 2\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2 + 6\omega_{10}\omega_7\omega_{23}\omega_{11}^3\omega_{19}\omega_{16}^2 - 2\omega_{10}\omega_7^3 v_3^2\omega_{11}^3\omega_{19}^2\omega_{16} - \omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 +$
$2\omega_{10}\omega_7^3\omega_{11}^3\omega_{19}^2\omega_{16} - 4\omega_{10}\omega_7^3 c_s^2\omega_{11}^3\omega_{19}\omega_{16}^2 - 4\omega_{10}\omega_7^2\omega_{11}^3\omega_{19}\omega_{16}^2 - 16\omega_{10}\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16}^2 - 3\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{11}^3\omega_{19}\omega_{16}^2 - 2\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2 -$
$4\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}^3\omega_{16}^2 - 2\omega_{10}\omega_7\omega_{23}\omega_{11}^3\omega_{19}^2\omega_{16}^2 - 2\omega_7^3\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 3\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3\omega_{19}\omega_{16}^2 + 2\omega_{10}\omega_7^3 c_s^2\omega_{11}^3\omega_{19}^2\omega_{16}^2 -$
$8\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{11}^3\omega_{16}^2 + 2\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}\omega_{16}^2 - 5\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{11}^3\omega_{19}\omega_{16}^2 + 2\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 + 4\omega_{10}\omega_7^2 c_s^2\omega_{11}^3\omega_{19}\omega_{16}^2 +$
$\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}^2\omega_{16}^2 - 2\omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}^3\omega_{19}^2\omega_{16} + 26\omega_{10}\omega_7\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16}^2 + 4\omega_{10}\omega_7^2 v_3^2\omega_{11}^3\omega_{19}^2\omega_{16} - 2\omega_{10}\omega_7^3 v_3^2\omega_{11}^2\omega_{19}^2\omega_{16}^2 +$
$2\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{11}\omega_{19}^2\omega_{16}^2 + 4\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2 + 2\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}^2\omega_{16}^2 - 4\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 24\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} +$
$2\omega_{10}\omega_7 v_3^2\omega_{23}\omega_{11}^3\omega_{19}^2\omega_{16}^2 - \omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 + 4\omega_{10}\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2 - 8\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16}^2 + 3\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16}^2 +$
$2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}^2\omega_{16} + 12\omega_{10}\omega_7\omega_{23} c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + \omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}^2 - \omega_{10}\omega_7^2 v_3^2\omega_{23}\omega_{11}^3\omega_{19}^2\omega_{16}^2 - 4\omega_{10}\omega_7^2 v_3^2\omega_{11}^3\omega_{19}^2\omega_{16}^2 -$
$2\omega_{10}\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16}^2 - 4\omega_{10}\omega_7^3 v_3^2\omega_{11}^3\omega_{19}\omega_{16}^2 + 4\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 + 12\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{19}^2\omega_{16}^2 - 8\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{11}\omega_{19}\omega_{16}^2 -$
$4\omega_{10}\omega_7^3\omega_{23}\omega_{19}^2\omega_{16}^2 + 4\omega_{10}\omega_7^3\omega_{11}^3\omega_{19}\omega_{16}^2 - 2\omega_{10}\omega_7^3 c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 4\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{19}^2\omega_{16}^2 - 4\omega_{10}\omega_7^3 v_3^2\omega_{23}\omega_{11}\omega_{19}\omega_{16}^2 + 2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16}^2$

$C_{55} = 18\omega_7^3 v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} - 108\omega_7^2 v_3^2\omega_{23} c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 72\omega_7 v_3^2\omega_{23}\omega_{11}^3\omega_{19} v_2^2\omega_{16} + 6\omega_7^3\omega_{11}^3\omega_{19}^2 v_2^2 - 84\omega_7 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} +$
$12\omega_7^2\omega_{11}^3\omega_{19}^2 v_2^2\omega_{16} + 24\omega_7^2 v_3^2\omega_{23} c_s^2\omega_{11}^3\omega_{16} - 12\omega_7^3\omega_{23}\omega_{19}^2 v_2^2\omega_{16} - 36\omega_7^2 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_7^3\omega_{11}^3\omega_{19} v_2^2\omega_{16} + 12\omega_7^2 c_s^4\omega_{11}^3\omega_{19}^2 + 12\omega_7^2 c_s^4\omega_{11}^3\omega_{19}\omega_{16} +$
$6\omega_7^3 c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 18\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 v_2^2\omega_{16} - \omega_7^3\omega_{23} c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} + 24\omega_7^2\omega_{23} c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} + 18\omega_7^3 v_3^2\omega_{11}^3\omega_{19}^2 v_2^2\omega_{16} + 6\omega_7^3 c_s^2\omega_{11}^3\omega_{19}^2 v_2^2\omega_{16} +$
$12\omega_7^2 c_s^2\omega_{11}^3\omega_{19}^2 v_2^2 + 6\omega_7^3\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 12\omega_7^3\omega_{23}\omega_{11}^3\omega_{19} v_2^2\omega_{16} - 12\omega_7^3\omega_{23} c_s^2\omega_{11}^2 v_2^2\omega_{16} - 12\omega_7^2\omega_{23} c_s^2\omega_{11}^3 v_2^2\omega_{16} + 12\omega_7\omega_{23} c_s^4\omega_{11}^3\omega_{19}\omega_{16} +$
$6\omega_7^3\omega_{23} c_s^2\omega_{11}^2\omega_{19}^2 v_2^2\omega_{16} + 60\omega_7^2 v_3^2\omega_{23} c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 24\omega_7\omega_{23} c_s^2\omega_{11}^3\omega_{19} v_2^2\omega_{16} + 6\omega_7^3 c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} - 36\omega_7^2 v_3^2\omega_{23}\omega_{11}^3 v_2^2\omega_{16} -$

$36\omega_7^3v_3^2\omega_{23}\omega_{11}^2v_2^2\omega_{16} + 36\omega_7^2v_3^2c_s^2\omega_{11}^3\omega_{19}\omega_{16} + 36\omega_7^3v_3^2c_s^2\omega_{11}^2\omega_{19}\omega_{16} + 24\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} + 6\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 + 6\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 -$
$12\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} + 12\omega_7^3c_s^2\omega_{11}^3\omega_{19}\omega_{16} - 12\omega_7^3\omega_{23}\omega_{11}^3v_2^2\omega_{16} - 24\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} - 144\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 12\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}\omega_{16} -$
$6\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} - 24\omega_7^2\omega_{23}c_s^4\omega_{11}^3\omega_{19}\omega_{16} - 24\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 24\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} - 48v_3^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} - 12\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 -$
$36\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16} + 60\omega_7v_3^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}\omega_{16} - 18\omega_7^3v_3^2c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} + 12\omega_7^2c_s^2\omega_{11}^3\omega_{19}v_2^2\omega_{16} + 18\omega_7^3v_3^2c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} -$
$18\omega_7^3v_3^2\omega_{11}^3\omega_{19}^2v_2^2 + 36\omega_7^2v_3^2\omega_{11}^3\omega_{19}v_2^2\omega_{16} + 6\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_7^2\omega_{11}^3\omega_{19}^2v_2^2 + 18\omega_7^3v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2 - 72\omega_7^2v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} +$
$18\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 18\omega_7^3v_3^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} + 12\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2 - 12\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19}\omega_{16} - 12\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} -$
$42\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} - 6\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 6\omega_7^3c_s^4\omega_{11}^3\omega_{19}^2 - 12\omega_7^3\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 6\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2v_2^2 - 12\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}v_2^2\omega_{16} +$
$12\omega_7^3c_s^4\omega_{11}^2\omega_{19}\omega_{16} + 12\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 12\omega_7^3c_s^2\omega_{11}^3\omega_{19}v_2^2\omega_{16} + 36\omega_7^2v_3^2c_s^2\omega_{11}^3\omega_{19}^2 - 6\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} - 36\omega_7^3v_3^2c_s^2\omega_{11}^3\omega_{19}\omega_{16} +$
$36\omega_7^3v_3^2\omega_{23}\omega_{11}^3v_2^2\omega_{16} - 12\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 72\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}\omega_{19}\omega_{16} - 12\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19}v_2^2\omega_{16} + 24\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} +$
$12\omega_7^3\omega_{23}c_s^2\omega_{11}^3v_2^2\omega_{16} - 36\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}v_2^2\omega_{16} - 24\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} - 12\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2v_2^2\omega_{16} - 54\omega_7^3v_3^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} - 12\omega_7^2c_s^2\omega_{11}^3\omega_{19}\omega_{16} -$
$6\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} - 132\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}\omega_{16} + 12\omega_7^2\omega_{23}\omega_{11}^3v_2^2\omega_{16} + 12\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 36\omega_7^3v_3^2\omega_{23}\omega_{11}^3\omega_{19}v_2^2\omega_{16} - 36\omega_7^2v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} -$
$12\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19}\omega_{16} - 18\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 6\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 72\omega_7v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} - 6\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2 - 6\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2\omega_{16} -$
$36\omega_7^2v_3^2\omega_{11}^3\omega_{19}^2v_2^2\omega_{16} - 4\omega_7^2\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} - 12\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 84\omega_7v_3^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} + 6\omega_7^3\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} - 18\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2v_2^2\omega_{16} +$
$18\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 36\omega_7^3v_3^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 24\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}^3\omega_{16} + 36\omega_7^2v_3^2\omega_{11}^3\omega_{19}^2v_2^2 + 24\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}\omega_{16} + 12\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}\omega_{16} -$
$12\omega_7^2c_s^4\omega_{11}^3\omega_{19}\omega_{16} - 12\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2v_2^2 - 12\omega_7^2\omega_{11}^3\omega_{19}v_2^2\omega_{16} + 72\omega_7^3v_3^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 36\omega_7^3v_3^2\omega_{23}\omega_{19}^2v_2^2\omega_{16} + 180\omega_7^2v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} +$
$18\omega_7\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} + 108\omega_7^2v_3^2\omega_{23}\omega_{11}^3\omega_{19}v_2^2\omega_{16} - 36\omega_7^3v_3^2\omega_{11}^3\omega_{19}v_2^2\omega_{16} - 12\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2\omega_{16} - 36\omega_7^2v_3^2c_s^2\omega_{11}^3\omega_{19}^2\omega_{16} -$
$18\omega_7^3v_3^2c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 12\omega_7^3\omega_{23}\omega_{11}\omega_{19}v_2^2\omega_{16} + 12\omega_7^3\omega_{23}c_s^2\omega_{19}^2v_2^2\omega_{16} - 36\omega_7^2v_3^2\omega_{23}\omega_{11}^2\omega_{19}^2v_2^2 - 6\omega_7^3\omega_{11}^2\omega_{19}^2v_2^2\omega_{16} + 12\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2v_2^2\omega_{16} +$
$36\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}v_2^2\omega_{16} - 12\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 + 24\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{16} + 24\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}v_2^2\omega_{16} - 12\omega_7^3c_s^2\omega_{11}^3\omega_{19}v_2^2\omega_{16} -$
$6\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} + 24\omega_7\omega_{23}\omega_{11}^3\omega_{19}v_2^2\omega_{16} + 12\omega_7^3\omega_{23}\omega_{11}^2v_2^2\omega_{16} + 78\omega_7^3v_3^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}\omega_{16} + 12\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2\omega_{16} - 12\omega_7^3c_s^2\omega_{11}^2\omega_{19}\omega_{16} -$
$12\omega_7^2c_s^4\omega_{11}^3\omega_{19}^2\omega_{16} + 36\omega_7^2v_3^2\omega_{23}\omega_{11}\omega_{19}^2v_2^2\omega_{16} + 12\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}v_2^2\omega_{16} + 12\omega_7^3\omega_{23}c_s^4\omega_{11}^3\omega_{19}\omega_{16} + 12\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}\omega_{16} - 6\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2v_2^2$

$C_{56} =$
$-72v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^2 - 36v_3^4\omega_{11}\omega_{18}^2\omega_6^2 + 4c_s^2\omega_{11}^3\omega_6 - 4c_s^4\omega_{11}^3\omega_{18}\omega_6^2 + 84v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6 - 4v_3^4\omega_{11}^3\omega_6 + 24v_3^2c_s^2\omega_{11}^3\omega_6^2 + 12c_s^2\omega_{11}\omega_{18}^2\omega_6^2 + 13v_3^2\omega_{11}^3\omega_{18}\omega_6^2 -$
$8c_s^2\omega_{18}^2\omega_6^2 + 24v_3^4\omega_{18}^2\omega_6^2 - 8c_s^4\omega_{11}^2\omega_{18}^2\omega_6 - 4v_3^4\omega_{11}^2\omega_6^2 + 4c_s^2\omega_{11}^2\omega_6^2 + 32v_3^4\omega_{11}^2\omega_{18}\omega_6^2 + 51v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 + 20v_3^2\omega_{11}^2\omega_{18}^2\omega_6 + 4c_s^4\omega_{11}^3\omega_6^2 -$
$4v_3^2\omega_{11}^3\omega_6^2 - 8c_s^2\omega_{11}^2\omega_{18}\omega_6^2 - 4c_s^4\omega_{11}^3\omega_6 - 13v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2 + 4v_3^2\omega_{11}^3\omega_6 + 8c_s^4\omega_{18}^2\omega_6^2 - 24v_3^2c_s^2\omega_{11}^2\omega_6^2 + 4c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2 - 24v_3^2\omega_{18}^2\omega_6^2 - 16v_3^4\omega_{11}^2\omega_{18}\omega_6 -$
$84v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6 - 20v_3^2\omega_{11}^3\omega_{18}\omega_6 - 4c_s^2\omega_{11}\omega_{18}^2\omega_6 + 4v_3^2\omega_{11}^2\omega_6^2 + 20v_3^2\omega_{11}\omega_{18}\omega_6^2 - 4c_s^4\omega_{11}^2\omega_6^2 + 96v_3^2c_s^2\omega_{18}^2\omega_6^2 + 8c_s^4\omega_{11}^3\omega_{18}\omega_6 + 20v_3^4\omega_{11}\omega_{18}^2\omega_6 -$
$4c_s^2\omega_{11}^3\omega_6^2 - 4c_s^4\omega_{11}\omega_{18}\omega_6^2 - 24v_3^2c_s^2\omega_{11}^3\omega_6 + 4v_3^4\omega_{11}^3\omega_6^2 - 51v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2 + 8v_3^4\omega_{11}^2\omega_{18}^2 - 4c_s^2\omega_{11}^2\omega_{18}^2 + 4c_s^2\omega_{11}^3\omega_{18}\omega_6^2 + 36v_3^2\omega_{11}\omega_{18}^2\omega_6^2 +$
$72v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6 - 13v_3^4\omega_{11}^3\omega_{18}\omega_6^2 - 12c_s^4\omega_{11}\omega_{18}^2\omega_6^2 + 4c_s^2\omega_{11}^3\omega_{18} - 32v_3^2\omega_{11}^2\omega_{18}\omega_6^2 - 8v_3^4\omega_{11}^3\omega_{18} + 8c_s^2\omega_{11}^2\omega_{18}^2\omega_6 + 8c_s^4\omega_{11}^2\omega_{18}\omega_6^2 - 48v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6 -$
$20v_3^4\omega_{11}^2\omega_{18}^2\omega_6 - 8v_3^2\omega_{11}^2\omega_{18}^2 + 120v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2 + 13v_3^4\omega_{11}^2\omega_{18}^2\omega_6^2 + 4c_s^4\omega_{11}^2\omega_{18}^2 + 16v_3^2\omega_{11}^2\omega_{18}\omega_6 - 36v_3^2c_s^2\omega_{11}^3\omega_{18} - 4c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 - 20v_3^4\omega_{11}\omega_{18}\omega_6^2 -$
$144v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^2 - 4c_s^4\omega_{11}^3\omega_{18} + 4c_s^4\omega_{11}\omega_{18}^2\omega_6 + 20v_3^4\omega_{11}^3\omega_{18}\omega_6 + 8v_3^2\omega_{11}^3\omega_{18} + 36v_3^2c_s^2\omega_{11}^2\omega_{18}^2 + 4c_s^2\omega_{11}\omega_{18}\omega_6^2 - 20v_3^2\omega_{11}\omega_{18}^2\omega_6 - 8c_s^2\omega_{11}^3\omega_{18}\omega_6$

$C_{57} = 60v_3^4\omega_{11}^2\omega_{18}\omega_6^3 + 60v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 18c_s^4\omega_{11}^3\omega_{18}\omega_6^2 - 12v_3^4\omega_{11}^2\omega_6^3 + 12v_3^4\omega_{11}^3\omega_{18}^2\omega_6 - 12v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6 - 12v_3^2c_s^2\omega_{11}^3\omega_6^2 +$
$12c_s^2\omega_{11}\omega_{18}^2\omega_6^2 - 48v_3^2\omega_{11}^3\omega_{18}\omega_6^2 - 12v_3^2\omega_{11}^3\omega_6^3 + 6c_s^2\omega_{11}^2\omega_{18}\omega_6^3 + 6c_s^2\omega_{11}^3\omega_{18}^2\omega_6 + 12v_3^2c_s^2\omega_{11}^3\omega_6^3 - 36v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^3 - 90v_3^4\omega_{11}\omega_{18}^2\omega_6^3 +$
$6c_s^4\omega_{11}^3\omega_{18}\omega_6^3 - 24v_3^4\omega_{11}^2\omega_{18}\omega_6^2 + 162v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 + 72v_3^4\omega_{18}^2\omega_6^3 + 12v_3^2\omega_{11}^3\omega_6^2 - 12c_s^2\omega_{18}^2\omega_6^3 - 12c_s^2\omega_{11}^2\omega_{18}\omega_6^2 + 12c_s^2\omega_{11}\omega_{18}^2\omega_6^2 +$
$27v_3^2\omega_{11}^3\omega_{18}\omega_6^3 - 12v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2 + 252v_3^2c_s^2\omega_{18}^2\omega_6^3 + 36v_3^2\omega_{11}\omega_{18}\omega_6^3 + 12v_3^2\omega_{11}^2\omega_6^3 + 12v_3^4\omega_{11}^3\omega_6^3 + 4v_3^4\omega_{11}^3\omega_{18}^2\omega_6^3 - 21v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3 +$
$6c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2 - 48v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6 + 24v_3^2\omega_{11}^3\omega_{18}\omega_6 - 5c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 19v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 72v_3^2\omega_{18}^2\omega_6^3 + 12c_s^4\omega_{11}^3\omega_{18}\omega_6 - 12v_3^2c_s^2\omega_{11}^2\omega_6^3 +$
$c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 - 12v_3^4\omega_{11}^3\omega_6^2 - 18v_3^4\omega_{11}^3\omega_{18}^2\omega_6^2 + 30v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2 + 12c_s^4\omega_{18}^2\omega_6^3 - 12v_3^2\omega_{11}^3\omega_{18}^2\omega_6 - 60v_3^2\omega_{11}^2\omega_{18}\omega_6^3 + 18c_s^2\omega_{11}^3\omega_{18}\omega_6^2 -$
$24c_s^4\omega_{11}^3\omega_{18}^2\omega_6 + 12c_s^4\omega_{11}^3\omega_{18}^2 - 81v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 + 48v_3^4\omega_{11}^3\omega_{18}\omega_6^2 - 12c_s^4\omega_{11}\omega_{18}^2\omega_6^2 - 6c_s^4\omega_{11}^2\omega_{18}\omega_6^3 - 6c_s^2\omega_{11}^3\omega_{18}\omega_6^3 + 90v_3^2\omega_{11}^3\omega_{18}^2\omega_6^3 +$
$24v_3^2\omega_{11}^2\omega_{18}\omega_6^2 - 48v_3^2c_s^2\omega_{11}^3\omega_{18}^2 + 12c_s^4\omega_{11}^2\omega_{18}\omega_6^2 + 12v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 27v_3^4\omega_{11}^3\omega_{18}\omega_6^3 - 12c_s^4\omega_{11}\omega_{18}^2\omega_6^3 - 12v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2 +$
$12v_3^4\omega_{11}^2\omega_{18}^2\omega_6^2 - c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3 - 36v_3^4\omega_{11}\omega_{18}\omega_6^3 - 306v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3 - 4v_3^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 6c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 + 13c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2 - 108v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^2 +$
$54v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3 + 19v_3^4\omega_{11}^2\omega_{18}^2\omega_6^3 + 102v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6 - 24v_3^4\omega_{11}^3\omega_{18}\omega_6 - c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 18v_3^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 12c_s^2\omega_{11}^3\omega_{18}\omega_6$

$C_{58} = -8\omega_{11}^3\omega_6^2 - 16c_s^2\omega_{11}^3\omega_6 + 24\omega_{11}\omega_{18}\omega_6^2 - 72c_s^2\omega_{11}\omega_{18}^2\omega_6^2 - 43v_3^2\omega_{11}^3\omega_{18}\omega_6^2 + 48c_s^2\omega_{18}^2\omega_6^2 - 28\omega_{11}^3\omega_{18}\omega_6 - 16c_s^2\omega_{11}^2\omega_6^2 - 68v_3^2\omega_{11}^2\omega_{18}^2\omega_6 +$
$16v_3^2\omega_{11}^3\omega_6^2 - 17\omega_{11}^2\omega_{18}^2\omega_6^2 + 56c_s^2\omega_{11}^2\omega_{18}\omega_6^2 + 43v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2 - 16c_s^2\omega_{11}^2\omega_{18}\omega_6 + 28\omega_{11}^2\omega_{18}^2\omega_6 - 16v_3^2\omega_{11}^3\omega_6 + 80v_3^2\omega_{18}^2\omega_6^2 + 8\omega_{11}^2\omega_6^2 +$
$68v_3^2\omega_{11}^3\omega_{18}\omega_6 + 32c_s^2\omega_{11}\omega_{18}^2\omega_6 - 16v_3^2\omega_{11}^2\omega_6^2 - 32\omega_{18}^2\omega_6^2 - 64v_3^2\omega_{11}\omega_{18}\omega_6^2 + 17\omega_{11}^3\omega_{18}\omega_6^2 + 8\omega_{11}^3\omega_6 + 16c_s^2\omega_{11}^3\omega_6^2 - 24\omega_{11}\omega_{18}^2\omega_6 +$
$20c_s^2\omega_{11}^2\omega_{18}^2 - 25c_s^2\omega_{11}^3\omega_{18}\omega_6^2 - 120v_3^2\omega_{11}\omega_{18}^2\omega_6^2 - 20c_s^2\omega_{11}^3\omega_{18} + 104v_3^2\omega_{11}^2\omega_{18}\omega_6^2 - 44c_s^2\omega_{11}^2\omega_{18}^2\omega_6 + 16\omega_{11}^2\omega_{18}\omega_6 + 28v_3^2\omega_{11}^2\omega_{18}^2 + 12\omega_{11}^3\omega_{18} -$
$48v_3^2\omega_{11}^2\omega_{18}\omega_6 - 40\omega_{11}^2\omega_{18}\omega_6^2 + 25c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 - 28v_3^2\omega_{11}^3\omega_{18} + 48\omega_{11}\omega_{18}^2\omega_6^2 - 32c_s^2\omega_{11}\omega_{18}\omega_6^2 - 12\omega_{11}^2\omega_{18}^2 + 64v_3^2\omega_{11}\omega_{18}^2\omega_6 + 44c_s^2\omega_{11}^3\omega_{18}\omega_6$

$C_{59} = 13\omega_7^2v_3^4\omega_{11}^2\omega_{19}^2 - 4c_s^4\omega_{11}^3\omega_{19} + 72\omega_7v_3^2c_s^2\omega_{11}\omega_{19}^2 + 8v_3^2\omega_{11}^3\omega_{19} - 4\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 + 36v_3^2c_s^2\omega_{11}^2\omega_{19}^2 - 24\omega_7^2v_3^2\omega_{19}^2 - 24\omega_7v_3^2c_s^2\omega_{11}^3 + 8\omega_7^2c_s^4\omega_{19}^2 +$
$4\omega_7c_s^2\omega_{11}^3 - 8v_3^2\omega_{11}^2\omega_{19}^2 - 4\omega_7v_3^4\omega_{11}^3 + 4\omega_7^2c_s^2\omega_{11}^3\omega_{19} - 13\omega_7^2v_3^4\omega_{11}^3\omega_{19} + 4c_s^4\omega_{11}^2\omega_{19}^2 - 32\omega_7^2v_3^2\omega_{11}^2\omega_{19} + 4\omega_7c_s^4\omega_{11}\omega_{19}^2 + 8\omega_7^2c_s^4\omega_{11}^2\omega_{19} -$
$36v_3^2c_s^2\omega_{11}^3\omega_{19} - 144\omega_7^2v_3^2c_s^2\omega_{11}\omega_{19}^2 - 20\omega_7v_3^2\omega_{11}\omega_{19}^2 - 13\omega_7^2v_3^2\omega_{11}^2\omega_{19}^2 + 4c_s^2\omega_{11}^3\omega_{19} - 8v_3^4\omega_{11}^3\omega_{19} - 4\omega_7^2v_3^2\omega_{11}^3 + 4\omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 - 72\omega_7^2v_3^2c_s^2\omega_{11}\omega_{19} +$
$4\omega_7^2c_s^4\omega_{11}^3 - 4\omega_7^2c_s^4\omega_{11}^2 + 8v_3^4\omega_{11}^2\omega_{19}^2 - 4\omega_7^2c_s^4\omega_{11}^3\omega_{19} + 4\omega_7^2v_3^2\omega_{11}^2 + 13\omega_7^2v_3^2\omega_{11}^3\omega_{19} - 4c_s^2\omega_{11}^2\omega_{19}^2 - 4\omega_7c_s^2\omega_{11}\omega_{19}^2 + 32\omega_7^2v_3^4\omega_{11}^2\omega_{19} + 20\omega_7v_3^4\omega_{11}\omega_{19}^2 -$
$8\omega_7^2c_s^2\omega_{11}^2\omega_{19} - 4\omega_7c_s^4\omega_{11}^3 + 24\omega_7^2v_3^2c_s^2\omega_{11}^3 + 4\omega_7v_3^2\omega_{11}^3 - 20\omega_7^2v_3^4\omega_{11}\omega_{19} + 8\omega_7c_s^2\omega_{11}^2\omega_{19}^2 - 48\omega_7v_3^2c_s^2\omega_{11}^2\omega_{19} + 4\omega_7^2c_s^2\omega_{11}\omega_{19} - 20\omega_7v_3^4\omega_{11}^2\omega_{19}^2 +$
$36\omega_7^2v_3^2\omega_{11}\omega_{19}^2 - 24\omega_7^2v_3^2c_s^2\omega_{11}^2 + 120\omega_7^2v_3^2c_s^2\omega_{11}^2\omega_{19} + 16\omega_7v_3^2\omega_{11}^2\omega_{19} - 12\omega_7^2c_s^4\omega_{11}\omega_{19}^2 + 20\omega_7v_3^4\omega_{11}^3\omega_{19} + 24\omega_7^2v_3^4\omega_{19}^2 - 8\omega_7^2c_s^2\omega_{19}^2 - 8\omega_7c_s^2\omega_{11}^3\omega_{19} +$
$4\omega_7^2c_s^2\omega_{11}^2 + 84\omega_7v_3^2c_s^2\omega_{11}^3\omega_{19} - 4\omega_7^2v_3^4\omega_{11}^2 - 8\omega_7c_s^4\omega_{11}^2\omega_{19}^2 + 20\omega_7^2v_3^2\omega_{11}\omega_{19} + 96\omega_7^2v_3^2c_s^2\omega_{19}^2 + 51\omega_7^2v_3^2c_s^2\omega_{11}^2\omega_{19}^2 + 20\omega_7v_3^2\omega_{11}^2\omega_{19}^2 - 4\omega_7^2c_s^4\omega_{11}\omega_{19} -$
$36\omega_7^2v_3^4\omega_{11}\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{11}\omega_{19}^2 + 4\omega_7^2v_3^4\omega_{11}^3 - 84\omega_7v_3^2c_s^2\omega_{11}^2\omega_{19}^2 - 16\omega_7v_3^4\omega_{11}^2\omega_{19} - 4\omega_7^2c_s^2\omega_{11}^3 - 51\omega_7^2v_3^2c_s^2\omega_{11}^3\omega_{19} - 20\omega_7v_3^2\omega_{11}^3\omega_{19} + 8\omega_7c_s^4\omega_{11}^3\omega_{19}$

$C_{60} = 60\omega_7^3v_3^2c_s^2\omega_{11}^2\omega_{19}^2 + 27\omega_7^3v_3^2\omega_{11}^3\omega_{19} + 12\omega_7^2v_3^4\omega_{11}^2\omega_{19}^2 - 12\omega_7^3c_s^2\omega_{19}^2 + 72\omega_7^3v_3^4\omega_{19}^2 + 6\omega_7^3c_s^4\omega_{11}^3\omega_{19} - 6\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 + 6\omega_7^3c_s^2\omega_{11}^2\omega_{19} +$
$13\omega_7^2c_s^4\omega_{11}^3\omega_{19}^2 + 60\omega_7^3v_3^4\omega_{11}^2\omega_{19} + 18\omega_7^2v_3^2\omega_{11}^3\omega_{19}^2 + 18\omega_7^2c_s^2\omega_{11}^3\omega_{19} + \omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 - 21\omega_7^3v_3^2c_s^2\omega_{11}^3\omega_{19} + 48\omega_7^2v_3^4\omega_{11}^3\omega_{19} - 19\omega_7^3v_3^2\omega_{11}^2\omega_{19}^2 +$
$24\omega_7^2v_3^2\omega_{11}^2\omega_{19} + 4\omega_7^3v_3^4\omega_{11}^3\omega_{19}^2 + 12\omega_7^2c_s^4\omega_{11}^2\omega_{19} - 108\omega_7^2v_3^2c_s^2\omega_{11}\omega_{19}^2 - 27\omega_7^3v_3^4\omega_{11}^3\omega_{19} - 12\omega_7^2v_3^2\omega_{11}^3\omega_{19}^2 - 48v_3^2c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_7^2v_3^2\omega_{11}^3 -$
$6\omega_7^3c_s^2\omega_{11}^3\omega_{19} + 6\omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 - 6\omega_7^3c_s^4\omega_{11}^2\omega_{19} - 5\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_7^3v_3^2c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_7^3v_3^4\omega_{11}^3 - 60\omega_7^3v_3^2\omega_{11}^2\omega_{19} - 18\omega_7^2v_3^4\omega_{11}^3\omega_{19}^2 -$
$18\omega_7^2c_s^4\omega_{11}^3\omega_{19} - \omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 48\omega_7^2v_3^2\omega_{11}^3\omega_{19} + 19\omega_7^3v_3^4\omega_{11}^2\omega_{19}^2 - 12\omega_7^3v_3^4\omega_{11}^2 + 54\omega_7^3v_3^2c_s^2\omega_{11}^2\omega_{19} + 12c_s^4\omega_{11}^3\omega_{19}^2 - 24\omega_7^2v_3^4\omega_{11}^2\omega_{19} -$
$4\omega_7^3v_3^2\omega_{11}^3\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{11}^2\omega_{19} - \omega_7^3c_s^4\omega_{11}^3\omega_{19}^2 - 81\omega_7^2v_3^2c_s^2\omega_{11}^3\omega_{19}^2 - 12\omega_7v_3^2\omega_{11}^3\omega_{19}^2 - 12\omega_7^2v_3^2c_s^2\omega_{11}^3 + 12\omega_7^3c_s^2\omega_{11}\omega_{19}^2 - 24\omega_7c_s^4\omega_{11}^3\omega_{19}^2 -$
$90\omega_7^3v_3^4\omega_{11}\omega_{19}^2 - 36\omega_7^3v_3^2c_s^2\omega_{11}\omega_{19} + 12\omega_7^3c_s^4\omega_{19}^2 - 12\omega_7^2v_3^2c_s^2\omega_{11}^2\omega_{19} - 12\omega_7^2c_s^4\omega_{11}\omega_{19}^2 - 72\omega_7^3v_3^2\omega_{19}^2 + 102\omega_7v_3^2c_s^2\omega_{11}^3\omega_{19}^2 - 24\omega_7v_3^4\omega_{11}^3\omega_{19} +$
$36\omega_7^3v_3^2\omega_{11}\omega_{19} + 252\omega_7^3v_3^2c_s^2\omega_{19}^2 - 12\omega_7c_s^2\omega_{11}^3\omega_{19} - 12\omega_7^3c_s^4\omega_{11}\omega_{19}^2 - 12\omega_7v_3^2c_s^2\omega_{11}^3\omega_{19} - 12\omega_7^3v_3^2c_s^2\omega_{11}^2 + 12\omega_7v_3^4\omega_{11}^3\omega_{19}^2 + 90\omega_7^3v_3^2\omega_{11}\omega_{19}^2 +$

$6\omega_7 c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_7^3 v_3^2\omega_{11}^2 + 162\omega_7^2 v_3^2 c_s^2\omega_{11}^2\omega_{19}^2 - 306\omega_7^3 v_3^2 c_s^2\omega_{11}\omega_{19}^2 + 12\omega_7^2 c_s^2\omega_{11}\omega_{19}^2 + 12\omega_7^3 v_3^2 c_s^2\omega_{11}^3 - 12\omega_7^2 v_3^4\omega_{11}^3 - 48\omega_7 v_3^2 c_s^2\omega_{11}^2\omega_{19}^2 + 30\omega_7^2 v_3^2 c_s^2\omega_{11}^3\omega_{19} + 24\omega_7 v_3^2\omega_{11}^3\omega_{19} + 12\omega_7 c_s^4\omega_{11}^3\omega_{19} - 36\omega_7^3 v_3^4\omega_{11}\omega_{19} - 12\omega_7^3 v_3^2\omega_{11}^3$

$C_{61} = -24\omega_7\omega_{11}\omega_{19}^2 + 17\omega_7^2\omega_{11}^3\omega_{19} - 28v_3^2\omega_{11}^3\omega_{19} + 25\omega_7^2 c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{11}^2\omega_{19}^2 + 80\omega_7^2 v_3^2\omega_{19}^2 - 16\omega_7 c_s^2\omega_{11}^3 + 28v_3^2\omega_{11}^2\omega_{19}^2 - 25\omega_7^2 c_s^2\omega_{11}^3\omega_{19} - 17\omega_7^2\omega_{11}^2\omega_{19}^2 - 32\omega_7^2\omega_{19}^2 + 12\omega_{11}^3\omega_{19} + 104\omega_7^2 v_3^2\omega_{11}^2\omega_{19} + 64\omega_7 v_3^2\omega_{11}\omega_{19}^2 + 43\omega_7^2 v_3^2\omega_{11}^2\omega_{19}^2 - 20c_s^2\omega_{11}^3\omega_{19} + 16\omega_7^2 v_3^2\omega_{11}^3 + 8\omega_7^2\omega_{11}^2 - 40\omega_7^2\omega_{11}^2\omega_{19} - 16\omega_7^2 v_3^2\omega_{11}^2 - 43\omega_7^2 v_3^2\omega_{11}^3\omega_{19} + 20c_s^2\omega_{11}^2\omega_{19}^2 + 32\omega_7 c_s^2\omega_{11}\omega_{19}^2 + 56\omega_7^2 c_s^2\omega_{11}^2\omega_{19} - 8\omega_7^2\omega_{11}^3 - 16\omega_7 v_3^2\omega_{11}^3 + 16\omega_7\omega_{11}^2\omega_{19} - 44\omega_7 c_s^2\omega_{11}^2\omega_{19}^2 - 32\omega_7^2 c_s^2\omega_{11}\omega_{19} + 8\omega_7\omega_{11}^3 - 120\omega_7^2 v_3^2\omega_{11}\omega_{19}^2 - 48\omega_7 v_3^2\omega_{11}^2\omega_{19} + 48\omega_7^2 c_s^2\omega_{19}^2 + 24\omega_7^2\omega_{11}\omega_{19} + 44\omega_7 c_s^2\omega_{11}^3\omega_{19} - 16\omega_7^2 c_s^2\omega_{11}^2 + 48\omega_7^2\omega_{11}\omega_{19}^2 - 28\omega_7\omega_{11}^3\omega_{19} - 64\omega_7^2 v_3^2\omega_{11}\omega_{19} - 68\omega_7 v_3^2\omega_{11}^2\omega_{19}^2 - 16\omega_7 c_s^2\omega_{11}^2\omega_{19} + 28\omega_7\omega_{11}^2\omega_{19}^2 - 72\omega_7^2 c_s^2\omega_{11}\omega_{19}^2 + 16\omega_7^2 c_s^2\omega_{11}^3 + 68\omega_7 v_3^2\omega_{11}^3\omega_{19}$

$C_{62} = 12 - 216c_s^4\omega_{11} + 234v_3^2\omega_{11} - 132c_s^2 + 82c_s^4\omega_{11}^2 - 18\omega_{11} - 98v_3^2\omega_{11}^2 - 156v_3^2 + 10v_3^2\omega_{11}^3 - 5c_s^4\omega_{11}^3 + 198c_s^2\omega_{11} - 216v_3^4\omega_{11} + 672v_3^2 c_s^2 + 144v_3^4 - 1008v_3^2 c_s^2\omega_{11} + 404v_3^2 c_s^2\omega_{11}^2 - 9v_3^4\omega_{11}^3 - \omega_{11}^3 + 6c_s^2\omega_{11}^3 - 34v_3^2 c_s^2\omega_{11}^3 + 144c_s^4 - 78c_s^2\omega_{11}^2 + 90v_3^4\omega_{11}^2 + 8\omega_{11}^2$

$C_{63} = 12 - 36c_s^4\omega_{11} + 378v_3^2\omega_{11} - 36c_s^2 + 14c_s^4\omega_{11}^2 - 18\omega_{11} - 154v_3^2\omega_{11}^2 - 252v_3^2 + 14v_3^2\omega_{11}^3 - c_s^4\omega_{11}^3 + 54c_s^2\omega_{11} - 756v_3^4\omega_{11} + 432v_3^2 c_s^2 + 504v_3^4 - 648v_3^2 c_s^2\omega_{11} + 252v_3^2 c_s^2\omega_{11}^2 - 29v_3^4\omega_{11}^3 - \omega_{11}^3 + 2c_s^2\omega_{11}^3 - 18v_3^2 c_s^2\omega_{11}^3 + 24c_s^4 - 22c_s^2\omega_{11}^2 + 310v_3^4\omega_{11}^2 + 8\omega_{11}^2$

2.3 MRT2

2.3.1 Definitions

Collision operator $\boldsymbol{C}$:

$$\boldsymbol{C}(\boldsymbol{f}) = \mathbf{M}_2^{-1}\mathbf{S}\left(\boldsymbol{\mu}_2^{(eq)} - \mathbf{M}_2\boldsymbol{f}\right),$$

where

$$\mathbf{S} = \mathrm{diag}(\omega_1, \omega_2, \omega_3, \cdots, \omega_{27}),$$

$\omega_1, \omega_2, \cdots, \omega_{27} \in (0, 2)$.

Matrix $\mathbf{M}_2$ corresponds to the transformation matrix to the raw moment basis defined by

$$\boldsymbol{\mu}_2 = \begin{pmatrix} m_{(0,0,0)} \\ m_{(1,0,0)} \\ m_{(0,1,0)} \\ m_{(0,0,1)} \\ m_{(1,1,0)} \\ m_{(1,0,1)} \\ m_{(0,1,1)} \\ m_{(2,0,0)} - m_{(0,2,0)} \\ m_{(2,0,0)} - m_{(0,0,2)} \\ m_{(2,0,0)} + m_{(0,2,0)} + m_{(0,0,2)} \\ m_{(1,2,0)} + m_{(1,0,2)} \\ m_{(2,1,0)} + m_{(0,1,2)} \\ m_{(2,0,1)} + m_{(0,2,1)} \\ m_{(1,2,0)} - m_{(1,0,2)} \\ m_{(2,1,0)} - m_{(0,1,2)} \\ m_{(2,0,1)} - m_{(0,2,1)} \\ m_{(1,1,1)} \\ m_{(2,2,0)} - 2m_{(2,0,2)} + m_{(0,2,2)} \\ m_{(2,2,0)} + m_{(2,0,2)} - 2m_{(0,2,2)} \\ m_{(2,2,0)} + m_{(2,0,2)} + m_{(0,2,2)} \\ m_{(2,1,1)} \\ m_{(1,2,1)} \\ m_{(1,1,2)} \\ m_{(2,2,1)} \\ m_{(2,1,2)} \\ m_{(1,2,2)} \\ m_{(2,2,2)} \end{pmatrix},$$

and is given by

$$\mathbf{M}_2 = \begin{pmatrix}
1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
0 & 1 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & 1 & -1 & -1 & 1 & 1 & 1 & 1 & -1 & -1 & -1 & -1 \\
0 & 0 & 1 & 0 & 0 & -1 & 0 & 1 & 1 & -1 & -1 & 1 & -1 & 1 & -1 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & 1 & -1 & -1 \\
0 & 0 & 0 & 1 & 0 & 0 & -1 & 1 & -1 & 1 & -1 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & -1 & -1 & 1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & 1 & -1 & 1 & -1 & -1 & 1 & -1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & 1 & -1 & -1 & 1 \\
0 & 1 & -1 & 0 & 1 & -1 & 0 & -1 & -1 & -1 & -1 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & 0 & -1 & 1 & 0 & -1 & -1 & -1 & -1 & -1 & 1 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & 1 & 1 & 1 & 1 & 1 & 2 & 2 & 2 & 2 & 2 & 2 & 2 & 2 & 2 & 2 & 2 & 2 & 3 & 3 & 3 & 3 & 3 & 3 & 3 & 3 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & 1 & -1 & -1 & 2 & 2 & 2 & 2 & -2 & -2 & -2 & -2 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & -1 & 1 & -1 & 0 & 0 & 0 & 0 & 2 & 2 & -2 & -2 & 2 & 2 & -2 & -2 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 2 & -2 & 2 & -2 & 2 & -2 & 2 & -2 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & -1 & -1 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & -1 & 1 & 1 & 1 & -1 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 1 & -1 & 1 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & -1 & 1 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & -2 & -2 & -2 & -2 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & -2 & -2 & -2 & -2 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 3 & 3 & 3 & 3 & 3 & 3 & 3 & 3 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & -1 & 1 & 1 & -1 & -1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & -1 & 1 & -1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & -1 & -1 & 1 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 1 & -1 & 1 & -1 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & -1 & -1 & 1 & 1 & -1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1
\end{pmatrix}.$$

The equilibrium moments $\boldsymbol{\mu}_2^{(eq)}$ are defined by

$$\boldsymbol{\mu}_2^{(eq)} = \mathbf{M}_2 \mathbf{M}^{-1} \boldsymbol{\mu}^{(eq)},$$

i.e.,

$$
\boldsymbol{\mu}_2^{(eq)} = \begin{pmatrix}
\rho \\
\rho v_1 \\
\rho v_2 \\
\rho v_3 \\
\rho v_1 v_2 \\
\rho v_1 v_3 \\
\rho v_2 v_3 \\
\rho(v_1^2 - v_2^2) \\
\rho(v_1^2 - v_3^2) \\
\rho(v_3^2 + v_2^2 + v_1^2 + 3c_s^2) \\
\rho(v_1 v_3^2 + v_1 v_2^2 + 2c_s^2 v_1) \\
\rho(v_2 v_3^2 + v_1^2 v_2 + 2c_s^2 v_2) \\
\rho(v_2^2 v_3 + v_1^2 v_3 + 2c_s^2 v_3) \\
\rho(v_1 v_2^2 - v_1 v_3^2) \\
\rho(v_1^2 v_2 - v_2 v_3^2) \\
\rho(v_1^2 v_3 - v_2^2 v_3) \\
\rho v_1 v_2 v_3 \\
\rho(v_2^2 v_3^2 - 2v_1^2 v_3^2 - c_s^2 v_3^2 + v_1^2 v_2^2 + 2c_s^2 v_2^2 - c_s^2 v_1^2) \\
\rho(-2v_2^2 v_3^2 + v_1^2 v_3^2 - c_s^2 v_3^2 + v_1^2 v_2^2 - c_s^2 v_2^2 + 2c_s^2 v_1^2) \\
\rho(v_2^2 v_3^2 + v_1^2 v_3^2 + 2c_s^2 v_3^2 + v_1^2 v_2^2 + 2c_s^2 v_2^2 + 2c_s^2 v_1^2 + 3c_s^4) \\
\rho(v_1^2 v_2 v_3 + c_s^2 v_2 v_3) \\
\rho(v_1 v_2^2 v_3 + c_s^2 v_1 v_3) \\
\rho(v_1 v_2 v_3^2 + c_s^2 v_1 v_2) \\
\rho(v_1^2 v_2^2 v_3 + c_s^2 v_2^2 v_3 + c_s^2 v_1^2 v_3 + c_s^4 v_3) \\
\rho(v_1^2 v_2 v_3^2 + c_s^2 v_2 v_3^2 + c_s^2 v_1^2 v_2 + c_s^4 v_2) \\
\rho(v_1 v_2^2 v_3^2 + c_s^2 v_1 v_3^2 + c_s^2 v_1 v_2^2 + c_s^4 v_1) \\
\rho(v_1^2 v_2^2 v_3^2 + c_s^2 v_2^2 v_3^2 + c_s^2 v_1^2 v_3^2 + c_s^4 v_3^2 + c_s^2 v_1^2 v_2^2 + c_s^4 v_2^2 + c_s^4 v_1^2 + c_s^6)
\end{pmatrix}.
$$

2.3.2 Conservation of mass: ρ

$$
\begin{aligned}
&\frac{\partial \rho}{\partial t} + \frac{v_1 \delta_l}{\delta_t}\frac{\partial \rho}{\partial x_1} + \frac{\rho \delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2 \delta_l}{\delta_t}\frac{\partial \rho}{\partial x_2} + \frac{\rho \delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3 \delta_l}{\delta_t}\frac{\partial \rho}{\partial x_3} + \frac{\rho \delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-1 + 3c_s^2 + v_1^2)\frac{v_1 \delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} + \\
&(-1 + c_s^2 + 3v_1^2)\frac{\rho \delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{\rho c_s^2 \delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2 \partial x_2} - \frac{\rho c_s^2 \delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1 \partial x_2^2} + (-1 + v_2^2 + 3c_s^2)\frac{v_2 \delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + (-1 + 3v_2^2 + c_s^2)\frac{\rho \delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} - \\
&\frac{\rho c_s^2 \delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2 \partial x_3} - \frac{\rho c_s^2 \delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2 \partial x_3} - \frac{\rho c_s^2 \delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1 \partial x_3^2} - \frac{\rho c_s^2 \delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2 \partial x_3^2} + (-1 + v_3^2 + 3c_s^2)\frac{v_3 \delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + (-1 + 3v_3^2 + c_s^2)\frac{\rho \delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} \\
&+ (-3v_1^4\omega_9 - c_s^4\omega_9 + 24v_1^2c_s^2 - 2c_s^2 - 6v_1^2 + 6v_1^4 + 2c_s^4 + c_s^2\omega_9 + 3v_1^2\omega_9 - 12v_1^2c_s^2\omega_9)\frac{\delta_l^4}{24\omega_9\delta_t}\frac{\partial^4 \rho}{\partial x_1^4} + \\
&(-4 + 6c_s^2 + 10v_1^2 - 3c_s^2\omega_9 - 5v_1^2\omega_9 + 2\omega_9)\frac{\rho v_1 \delta_l^4}{12\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + (3c_s^2\omega_{12} - 3c_s^2\omega_9 + v_1^2\omega_{12} - v_1^2\omega_9 + \omega_9 - \omega_{12})\frac{v_2 v_1 \delta_l^4}{4\omega_9\omega_{12}\delta_t}\frac{\partial^4 \rho}{\partial x_1^3 \partial x_2} \\
&+ (c_s^2\omega_{12} - c_s^2\omega_9 + 3v_1^2\omega_{12} - 3v_1^2\omega_9 + \omega_9 - \omega_{12})\frac{v_2 \rho \delta_l^4}{4\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_1}{\partial x_1^3 \partial x_2} + (v_1^2\omega_5\omega_9\omega_{12} - \omega_5\omega_{12} - 3c_s^2\omega_5\omega_9 - \omega_5\omega_9\omega_{12} - \\
&6c_s^2\omega_9\omega_{12} + 3\omega_5\omega_9 + 3c_s^2\omega_5\omega_{12} + 3c_s^2\omega_5\omega_9\omega_{12} - 3v_1^2\omega_5\omega_9 + v_1^2\omega_5\omega_{12})\frac{\rho v_1 \delta_l^4}{12\omega_5\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^3 \partial x_2} + (-2 + \omega_5)\frac{c_s^4 \delta_l^4}{6\omega_5\delta_t}\frac{\partial^4 \rho}{\partial x_1^2 \partial x_2^2} + \\
&(\omega_5 - \omega_{12})\frac{\rho v_1 c_s^2 \delta_l^4}{2\omega_5\omega_{12}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2 \partial x_2^2} + (\omega_5 - \omega_{15})\frac{v_2 \rho c_s^2 \delta_l^4}{2\omega_5\omega_{15}\delta_t}\frac{\partial^4 v_2}{\partial x_1^2 \partial x_2^2} + \\
&(\omega_{10} - 3\omega_{10}c_s^2 - \omega_{10}v_2^2 + 3c_s^2\omega_{15} + v_2^2\omega_{15} - \omega_{15})\frac{v_2 v_1 \delta_l^4}{4\omega_{10}\omega_{15}\delta_t}\frac{\partial^4 \rho}{\partial x_1 \partial x_2^3} + (\omega_{10}v_2^2\omega_5\omega_{15} - 6\omega_{10}c_s^2\omega_{15} - \omega_{10}\omega_5\omega_{15} + \\
&3\omega_{10}\omega_5 + 3c_s^2\omega_5\omega_{15} - \omega_5\omega_{15} - 3\omega_{10}c_s^2\omega_5 - 3\omega_{10}v_2^2\omega_5 + 3\omega_{10}c_s^2\omega_5\omega_{15} + v_2^2\omega_5\omega_{15})\frac{v_2 \rho \delta_l^4}{12\omega_{10}\omega_5\omega_{15}\delta_t}\frac{\partial^4 v_1}{\partial x_1 \partial x_2^3} + \\
&(\omega_{10} - \omega_{10}c_s^2 - 3\omega_{10}v_2^2 + c_s^2\omega_{15} + 3v_2^2\omega_{15} - \omega_{15})\frac{\rho v_1 \delta_l^4}{4\omega_{10}\omega_{15}\delta_t}\frac{\partial^4 v_2}{\partial x_1 \partial x_2^3} + \\
&(-6v_2^2 + \omega_{10}c_s^2 - 2c_s^2 + 3\omega_{10}v_2^2 + 2c_s^4 - 3\omega_{10}v_2^4 - 12\omega_{10}v_2^2c_s^2 + 24v_2^2c_s^2 + 6v_2^4 - \omega_{10}c_s^4)\frac{\delta_l^4}{24\omega_{10}\delta_t}\frac{\partial^4 \rho}{\partial x_2^4} +
\end{aligned}
$$

$$(-4+2\omega_{10}+10v_2^2-3\omega_{10}c_s^2+6c_s^2-5\omega_{10}v_2^2)\frac{v_2\rho\delta_l^4}{12\omega_{10}\delta_t}\frac{\partial^4 v_2}{\partial x_2^4}+$$
$$(-\omega_{13}+\omega_{13}v_1^2+3\omega_{13}c_s^2-3c_s^2\omega_9-v_1^2\omega_9+\omega_9)\frac{v_3v_1\delta_l^4}{4\omega_{13}\omega_9\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3}+$$
$$(-\omega_{13}+3\omega_{13}v_1^2+\omega_{13}c_s^2-c_s^2\omega_9-3v_1^2\omega_9+\omega_9)\frac{v_3\rho\delta_l^4}{4\omega_{13}\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3}+(3\omega_{13}c_s^2\omega_9\omega_6+\omega_{13}v_1^2\omega_6+\omega_{13}v_1^2\omega_9\omega_6-$$
$$6\omega_{13}c_s^2\omega_9+3\omega_{13}c_s^2\omega_6-\omega_{13}\omega_9\omega_6-3c_s^2\omega_9\omega_6+3\omega_9\omega_6-\omega_{13}\omega_6-3v_1^2\omega_9\omega_6)\frac{\rho v_1\delta_l^4}{12\omega_{13}\omega_9\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}+$$
$$(-\omega_8+\omega_5)\frac{v_3\rho c_s^2\delta_l^4}{2\omega_8\omega_5\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}+(-\omega_8+\omega_6)\frac{v_2\rho c_s^2\delta_l^4}{2\omega_8\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}+(-\omega_8+\omega_5)\frac{v_3\rho c_s^2\delta_l^4}{2\omega_8\omega_5\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}+$$
$$(\omega_7-\omega_8)\frac{\rho v_1c_s^2\delta_l^4}{2\omega_7\omega_8\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3}+(-\omega_{16}+\omega_{10}+3\omega_{16}c_s^2-3\omega_{10}c_s^2-\omega_{10}v_2^2+\omega_{16}v_2^2)\frac{v_2v_3\delta_l^4}{4\omega_{16}\omega_{10}\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3}+$$
$$(-\omega_{16}+\omega_{10}+\omega_{16}c_s^2-\omega_{10}c_s^2-3\omega_{10}v_2^2+3\omega_{16}v_2^2)\frac{v_3\rho\delta_l^4}{4\omega_{16}\omega_{10}\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}+(-6\omega_{16}\omega_{10}c_s^2-\omega_{16}\omega_7-\omega_{16}\omega_{10}\omega_7+3\omega_{10}\omega_7+$$
$$\omega_{16}\omega_{10}v_2^2\omega_7+\omega_{16}v_2^2\omega_7+3\omega_{16}\omega_{10}\omega_7c_s^2+3\omega_{16}\omega_7c_s^2-3\omega_{10}v_2^2\omega_7-3\omega_{10}\omega_7c_s^2)\frac{v_2\rho\delta_l^4}{12\omega_{16}\omega_{10}\omega_7\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}+$$
$$(-2+\omega_6)\frac{c_s^4\delta_l^4}{6\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}+(-\omega_{13}+\omega_6)\frac{\rho v_1c_s^2\delta_l^4}{2\omega_{13}\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}+(-\omega_{18}+\omega_6)\frac{v_3\rho c_s^2\delta_l^4}{2\omega_{18}\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2}+$$
$$(-\omega_8+\omega_6)\frac{v_2\rho c_s^2\delta_l^4}{2\omega_8\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2}+(\omega_7-\omega_8)\frac{\rho v_1c_s^2\delta_l^4}{2\omega_7\omega_8\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2}+(-2+\omega_7)\frac{c_s^4\delta_l^4}{6\omega_7\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}+(-\omega_{16}+\omega_7)\frac{v_2\rho c_s^2\delta_l^4}{2\omega_{16}\omega_7\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2}$$
$$+(\omega_7-\omega_{19})\frac{v_3\rho c_s^2\delta_l^4}{2\omega_7\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}+(-v_3^2\omega_{11}+3c_s^2\omega_{18}+\omega_{11}-\omega_{18}-3c_s^2\omega_{11}+v_3^2\omega_{18})\frac{v_3v_1\delta_l^4}{4\omega_{11}\omega_{18}\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3}+$$
$$(v_3^2\omega_{18}\omega_6-\omega_{18}\omega_6-6c_s^2\omega_{11}\omega_{18}+3c_s^2\omega_{18}\omega_6+v_3^2\omega_{11}\omega_{18}\omega_6-\omega_{11}\omega_{18}\omega_6+3\omega_{11}\omega_6-3c_s^2\omega_{11}\omega_6+3c_s^2\omega_{11}\omega_{18}\omega_6-$$
$$3v_3^2\omega_{11}\omega_6)\frac{v_3\rho\delta_l^4}{12\omega_{11}\omega_{18}\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}+(-3v_3^2\omega_{11}+c_s^2\omega_{18}+\omega_{11}-\omega_{18}-c_s^2\omega_{11}+3v_3^2\omega_{18})\frac{\rho v_1\delta_l^4}{4\omega_{11}\omega_{18}\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3}+$$
$$(-v_3^2\omega_{11}+\omega_{11}+v_3^2\omega_{19}-3c_s^2\omega_{11}+3c_s^2\omega_{19}-\omega_{19})\frac{v_2v_3\delta_l^4}{4\omega_{11}\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3}+(-3v_3^2\omega_7\omega_{11}+3\omega_7\omega_{11}+v_3^2\omega_7\omega_{19}-\omega_7\omega_{19}-$$
$$\omega_7\omega_{11}\omega_{19}-6c_s^2\omega_{11}\omega_{19}+3\omega_7c_s^2\omega_{11}\omega_{19}-3\omega_7c_s^2\omega_{11}+3\omega_7c_s^2\omega_{19}+v_3^2\omega_7\omega_{11}\omega_{19})\frac{v_3\rho\delta_l^4}{12\omega_7\omega_{11}\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3}+$$
$$(-3v_3^2\omega_{11}+\omega_{11}+3v_3^2\omega_{19}-c_s^2\omega_{11}+c_s^2\omega_{19}-\omega_{19})\frac{v_2\rho\delta_l^4}{4\omega_{11}\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3}+$$
$$(-c_s^4\omega_{11}-6v_3^3+3v_3^2\omega_{11}-2c_s^2+24v_3^2c_s^2+2c_s^4-12v_3^2c_s^2\omega_{11}-3v_3^4\omega_{11}+c_s^2\omega_{11}+6v_3^4)\frac{\delta_l^4}{24\omega_{11}\delta_t}\frac{\partial^4\rho}{\partial x_3^4}+$$
$$(-4+10v_3^2-5v_3^2\omega_{11}+6c_s^2+2\omega_{11}-3c_s^2\omega_{11})\frac{v_3\rho\delta_l^4}{12\omega_{11}\delta_t}\frac{\partial^4 v_3}{\partial x_3^4}=0.$$

2.3.3 Conservation of momentum: ρv_1

$$v_1\frac{\partial\rho}{\partial t}+\rho\frac{\partial v_1}{\partial t}+(c_s^2+v_1^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1}+\frac{2\rho v_1\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1}+\frac{v_2v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2}+\frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_2}+\frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2}+\frac{v_3v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3}+\frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_3}+$$
$$\frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3}+(-2+4c_s^2+6v_1^2-2c_s^2\omega_9-3v_1^2\omega_9+\omega_9)\frac{\delta_l^2}{\omega_9\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1}+(2-\omega_9)\frac{3\rho v_1\delta_l^2}{\omega_9\delta_t}\left(\frac{\partial v_1}{\partial x_1}\right)^2+$$
$$(-2+\omega_5)\frac{c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1}+(-2+\omega_5)\frac{c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2}+(-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1}+(-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3}+$$
$$(-2+6c_s^2+2v_1^2-3c_s^2\omega_9-v_1^2\omega_9+\omega_9)\frac{v_1\delta_l^2}{2\omega_9\delta_t}\frac{\partial^2\rho}{\partial x_1^2}+(-2+2c_s^2+6v_1^2-c_s^2\omega_9-3v_1^2\omega_9+\omega_9)\frac{\rho\delta_l^2}{2\omega_9\delta_t}\frac{\partial^2 v_1}{\partial x_1^2}+$$
$$(-2+\omega_5)\frac{\rho c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial^2 v_2}{\partial x_1\partial x_2}+(-2+\omega_5)\frac{\rho c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial^2 v_1}{\partial x_2^2}+(-2+\omega_6)\frac{\rho c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3}+(-2+\omega_6)\frac{\rho c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_3^2}+C_1\frac{\delta_l^3}{12\omega_9^2\delta_t}\frac{\partial^3\rho}{\partial x_1^3}+$$
$$(-24+36c_s^2+60v_1^2-36c_s^2\omega_9-4\omega_9^2-60v_1^2\omega_9+24\omega_9+11v_1^2\omega_9^2+5c_s^2\omega_9^2)\frac{\rho v_1\delta_l^3}{6\omega_9^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^3}+C_2\frac{v_2v_1\delta_l^3}{\omega_5\omega_9^2\omega_{12}\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2}+$$
$$C_3\frac{v_2\rho\delta_l^3}{\omega_5\omega_9^2\omega_{12}\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2}+C_4\frac{\rho v_1\delta_l^3}{12\omega_5^2\omega_9^2\omega_{12}\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2}+(-12-\omega_5^2+12\omega_5)\frac{c_s^4\delta_l^3}{6\omega_5^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2}+$$
$$(12\omega_5^2-\omega_5^2\omega_9\omega_{12}-12\omega_5^2\omega_9-12\omega_9\omega_{12}-12\omega_5\omega_{12}+12\omega_5\omega_9\omega_{12}+12\omega_5\omega_9)\frac{\rho v_1c_s^2\delta_l^3}{6\omega_5^2\omega_9\omega_{12}\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2}+$$
$$(-\omega_5^2+\omega_5\omega_{15}+2\omega_5-2\omega_{15})\frac{v_2\rho c_s^2\delta_l^3}{\omega_5^2\omega_{15}\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2}+C_5\frac{v_2v_1\delta_l^3}{12\omega_{10}\omega_5\omega_{15}\delta_t}\frac{\partial^3\rho}{\partial x_2^3}+C_6\frac{v_2\rho\delta_l^3}{6\omega_5^2\omega_{15}\delta_t}\frac{\partial^3 v_1}{\partial x_2^3}+C_7\frac{\rho v_1\delta_l^3}{12\omega_{10}\omega_5\omega_{15}\delta_t}\frac{\partial^3 v_2}{\partial x_2^3}+$$
$$C_8\frac{v_3v_1\delta_l^3}{\omega_{13}\omega_9^2\omega_6\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3}+C_9\frac{v_3\rho\delta_l^3}{\omega_{13}\omega_9^2\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3}+C_{10}\frac{\rho v_1\delta_l^3}{12\omega_{13}\omega_9^2\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3}+$$
$$(\omega_8\omega_5\omega_6+\omega_5^2-\omega_5^2\omega_6-\omega_8\omega_6+\omega_5\omega_6-\omega_8\omega_5)\frac{v_3\rho c_s^2\delta_l^3}{\omega_8\omega_5^2\omega_6\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3}+$$
$$(\omega_8\omega_5\omega_6-\omega_8\omega_6+\omega_6^2+\omega_5\omega_6-\omega_5\omega_6^2-\omega_8\omega_5)\frac{v_2\rho c_s^2\delta_l^3}{\omega_8\omega_5\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3}+$$
$$(\omega_8\omega_5\omega_6+\omega_5^2-\omega_5^2\omega_6-\omega_8\omega_6+\omega_5\omega_6-\omega_8\omega_5)\frac{v_3\rho c_s^2\delta_l^3}{\omega_8\omega_5^2\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_2^2\partial x_3}+$$

$$
\begin{aligned}
&(-\omega_7\omega_8\omega_5\omega_6 + 6\omega_8\omega_5\omega_6 + 6\omega_7\omega_6 - 6\omega_8\omega_6 + 6\omega_7\omega_5 - 6\omega_7\omega_5\omega_6 - 6\omega_8\omega_5)\frac{\rho v_1 c_s^2 \delta_l^3}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2 \partial x_3} + \\
&(-12 - \omega_6^2 + 12\omega_6)\frac{c_s^4\delta_l^3}{6\omega_6^2\delta_t}\frac{\partial^3 \rho}{\partial x_1 \partial x_3^2} + \\
&(-\omega_{13}\omega_9\omega_6^2 + 12\omega_{13}\omega_9\omega_6 + 12\omega_6^2 + 12\omega_9\omega_6 - 12\omega_9\omega_6^2 - 12\omega_{13}\omega_6 - 12\omega_{13}\omega_9)\frac{\rho v_1 c_s^2\delta_l^3}{6\omega_{13}\omega_9\omega_6^2\delta_t}\frac{\partial^3 v_1}{\partial x_1 \partial x_3^2} + \\
&(\omega_{18}\omega_6 - \omega_6^2 - 2\omega_{18} + 2\omega_6)\frac{v_3\rho c_s^2\delta_l^3}{\omega_{18}\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1 \partial x_3^2} + (\omega_8\omega_5\omega_6 - \omega_8\omega_6 + \omega_6^2 + \omega_5\omega_6 - \omega_5\omega_6^2 - \omega_8\omega_5)\frac{v_2\rho c_s^2\delta_l^3}{\omega_8\omega_5\omega_6^2\delta_t}\frac{\partial^3 v_1}{\partial x_2 \partial x_3^2} + \\
&(-\omega_7\omega_8\omega_5\omega_6 + 6\omega_8\omega_5\omega_6 + 6\omega_7\omega_6 - 6\omega_8\omega_6 + 6\omega_7\omega_5 - 6\omega_7\omega_5\omega_6 - 6\omega_8\omega_5)\frac{\rho v_1 c_s^2\delta_l^3}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_2}{\partial x_2 \partial x_3^2} + \\
&C_{11}\frac{v_3 v_1\delta_l^3}{12\omega_{11}\omega_{18}\omega_6\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_{12}\frac{v_3\rho\delta_l^3}{6\omega_{18}\omega_6^2\delta_t}\frac{\partial^3 v_1}{\partial x_3^3} + C_{13}\frac{\rho v_1\delta_l^3}{12\omega_{11}\omega_{18}\omega_6\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + C_{14}\frac{v_1\delta_l^4}{12\omega_9^3\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C_{15}\frac{\rho\delta_l^4}{12\omega_9^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + \\
&C_{16}\frac{v_2\delta_l^4}{4\omega_5^2\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C_{17}\frac{v_2\rho v_1\delta_l^4}{4\omega_5^2\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{18}\frac{\rho\delta_l^4}{12\omega_5^3\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{19}\frac{v_1\delta_l^4}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + \\
&C_{20}\frac{\rho\delta_l^4}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{21}\frac{v_2\rho v_1\delta_l^4}{2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{22}\frac{v_2\delta_l^4}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + \\
&C_{23}\frac{v_2\rho v_1\delta_l^4}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{24}\frac{\rho\delta_l^4}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{25}\frac{v_1\delta_l^4}{24\omega_{10}^2\omega_5^2\omega_{15}^2\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C_{26}\frac{\rho\delta_l^4}{24\omega_5^3\omega_{15}^2\delta_t}\frac{\partial^4 v_1}{\partial x_2^4} + \\
&C_{27}\frac{v_2\rho v_1\delta_l^4}{12\omega_{10}^2\omega_5^2\omega_{15}^2\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C_{28}\frac{v_3\delta_l^4}{4\omega_{13}^2\omega_9^3\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{29}\frac{v_3\rho v_1\delta_l^4}{4\omega_{13}^2\omega_9^3\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{30}\frac{\rho\delta_l^4}{12\omega_{13}^2\omega_9^3\omega_6^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C_{31}\frac{v_2 v_3 v_1\delta_l^4}{\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{32}\frac{v_2 v_3\rho\delta_l^4}{\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{33}\frac{v_3\rho v_1\delta_l^4}{2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{34}\frac{v_2\rho v_1\delta_l^4}{2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{35}\frac{2v_3 c_s^4\delta_l^4}{\omega_8^2\omega_5^3\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{36}\frac{v_3\rho v_1 c_s^2\delta_l^4}{2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{37}\frac{v_2 v_3\rho c_s^2\delta_l^4}{\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C_{38}\frac{\rho c_s^2\delta_l^4}{12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{39}\frac{v_2 v_3 v_1\delta_l^4}{4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} \\
&+ C_{40}\frac{v_2 v_3\rho\delta_l^4}{2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6^2\delta_t}\frac{\partial^4 v_1}{\partial x_2^3\partial x_3} + C_{41}\frac{v_3\rho v_1\delta_l^4}{4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{42}\frac{v_2\rho v_1\delta_l^4}{12\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + \\
&C_{43}\frac{v_1\delta_l^4}{12\omega_{13}^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{44}\frac{\rho\delta_l^4}{12\omega_{13}^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{45}\frac{v_3\rho v_1\delta_l^4}{2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + \\
&C_{46}\frac{\delta_l^4}{2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C_{47}\frac{\rho\delta_l^4}{2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{48}\frac{\rho\delta_l^4}{12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{49}\frac{v_3\rho\delta_l^4}{\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{50}\frac{\delta_l^4}{12\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{51}\frac{\rho\delta_l^4}{4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} + \\
&C_{52}\frac{v_2\rho\delta_l^4}{2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{53}\frac{\rho\delta_l^4}{4\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + \\
&C_{54}\frac{v_3\delta_l^4}{12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{55}\frac{v_3\rho v_1\delta_l^4}{12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{56}\frac{\rho\delta_l^4}{12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + \\
&C_{57}\frac{v_2 v_3 v_1\delta_l^4}{4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{58}\frac{v_2 v_3\rho\delta_l^4}{2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_2\partial x_3^3} + C_{59}\frac{v_3\rho v_1\delta_l^4}{12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&C_{60}\frac{v_2\rho v_1\delta_l^4}{4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{61}\frac{v_1\delta_l^4}{24\omega_{11}^2\omega_{18}^2\omega_6^2\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{62}\frac{\rho\delta_l^4}{24\omega_{18}^2\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_3^4} + C_{63}\frac{v_3\rho v_1\delta_l^4}{12\omega_{11}^2\omega_{18}^2\omega_6^2\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$C_1 = -36v_1^4\omega_9 - 12c_s^4\omega_9 + 144v_1^2c_s^2 - 12c_s^2 + c_s^4\omega_9^2 - 36v_1^2 + 7v_1^4\omega_9^2 + 36v_1^4 + 12c_s^4 + 12c_s^2\omega_9 + 24v_1^2c_s^2\omega_9^2 + 36v_1^2\omega_9 - 144v_1^2c_s^2\omega_9 - 7v_1^2\omega_9^2 - c_s^2\omega_9^2$$

$$C_2 = -v_1^2\omega_5\omega_9\omega_{12} - \omega_9\omega_{12} - \omega_5\omega_{12} - 3c_s^2\omega_5\omega_9 + \omega_5\omega_9\omega_{12} + 3c_s^2\omega_9\omega_{12} + \omega_5\omega_9 + 3c_s^2\omega_5\omega_{12} - 3c_s^2\omega_5\omega_9\omega_{12} + \omega_9^2 + v_1^2\omega_5\omega_9^2 - v_1^2\omega_9^2 - v_1^2\omega_5\omega_9 + v_1^2\omega_9\omega_{12} + v_1^2\omega_5\omega_{12} - 3c_s^2\omega_9^2 - \omega_5\omega_9^2 + 3c_s^2\omega_5\omega_9^2$$

$$C_3 = -3v_1^2\omega_5\omega_9\omega_{12} - \omega_9\omega_{12} - \omega_5\omega_{12} - c_s^2\omega_5\omega_9 + \omega_5\omega_9\omega_{12} + c_s^2\omega_9\omega_{12} + \omega_5\omega_9 + c_s^2\omega_5\omega_{12} - c_s^2\omega_5\omega_9\omega_{12} + \omega_9^2 + 3v_1^2\omega_5\omega_9^2 - 3v_1^2\omega_9^2 - 3v_1^2\omega_5\omega_9 + 3v_1^2\omega_9\omega_{12} + 3v_1^2\omega_5\omega_{12} - c_s^2\omega_9^2 - \omega_5\omega_9^2 + c_s^2\omega_5\omega_9^2$$

$$C_4 = -3v_1^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_5^2\omega_9^2 + 12c_s^2\omega_5^2\omega_9^2 - 12v_1^2\omega_5^2\omega_9 + 12v_1^2\omega_5^2\omega_{12} + 42c_s^2\omega_5\omega_9^2\omega_{12} + 6\omega_5^2\omega_9\omega_{12} + 12v_1^2\omega_5^2\omega_9^2 - 6\omega_5\omega_9^2\omega_{12} - 12c_s^2\omega_5^2\omega_9 - 18c_s^2\omega_5^2\omega_9\omega_{12} - 12\omega_5^2\omega_{12} - 24c_s^2\omega_9^2\omega_{12} + 36c_s^2\omega_5^2\omega_{12} + 12\omega_5^2\omega_9 - 11c_s^2\omega_5^2\omega_9^2\omega_{12} + 3\omega_5^2\omega_9^2\omega_{12} - 24c_s^2\omega_5\omega_9\omega_{12} - 12v_1^2\omega_5\omega_9^2 + 6v_1^2\omega_5\omega_9^2\omega_{12} + 12\omega_5\omega_9^2 - 6v_1^2\omega_5^2\omega_9\omega_{12} - 12c_s^2\omega_5\omega_9^2$$

$$C_5 = 12\omega_{10} + \omega_{10}v_2^2\omega_5\omega_{15} - \omega_{10}\omega_5\omega_{15} - 36\omega_{10}c_s^2 - 6\omega_{10}\omega_5 - 12\omega_{10}v_2^2 - 18c_s^2\omega_5\omega_{15} + 6\omega_5\omega_{15} + 36c_s^2\omega_{15} + 18\omega_{10}c_s^2\omega_5 + 12v_2^2\omega_{15} + 6\omega_{10}v_2^2\omega_5 - 12\omega_{15} + 3\omega_{10}c_s^2\omega_5\omega_{15} - 6v_2^2\omega_5\omega_{15}$$

$$C_6 = -6c_s^2\omega_5 - 3\omega_5^2 - v_2^2\omega_5^2\omega_{15} + 15c_s^2\omega_5\omega_{15} + 3c_s^2\omega_5^2 - 3\omega_5\omega_{15} - 12c_s^2\omega_{15} + 6\omega_5 - 3c_s^2\omega_5^2\omega_{15} + \omega_5^2\omega_{15} + 3v_2^2\omega_5^2 - 6v_2^2\omega_5 + 3v_2^2\omega_5\omega_{15}$$

$$C_7 = 12\omega_{10} + 3\omega_{10}v_2^2\omega_5\omega_{15} - \omega_{10}\omega_5\omega_{15} - 12\omega_{10}c_s^2 - 6\omega_{10}\omega_5 - 36\omega_{10}v_2^2 - 6c_s^2\omega_5\omega_{15} + 6\omega_5\omega_{15} + 12c_s^2\omega_{15} + 6\omega_{10}c_s^2\omega_5 + 36v_2^2\omega_{15} + 18\omega_{10}v_2^2\omega_5 - 12\omega_{15} + \omega_{10}c_s^2\omega_5\omega_{15} - 18v_2^2\omega_5\omega_{15}$$

$C_8 = v_1^2\omega_9^2\omega_6 - 3\omega_{13}c_s^2\omega_9\omega_6 + 3c_s^2\omega_9^2\omega_6 + \omega_{13}v_1^2\omega_6 - \omega_{13}v_1^2\omega_9\omega_6 + 3\omega_{13}c_s^2\omega_9 - \omega_9^2\omega_6 + 3\omega_{13}c_s^2\omega_6 + \omega_{13}\omega_9\omega_6 + \omega_{13}v_1^2\omega_9 - 3c_s^2\omega_9\omega_6 + \omega_9\omega_6 + \omega_9^2 - v_1^2\omega_9^2 - \omega_{13}\omega_6 - 3c_s^2\omega_9^2 - v_1^2\omega_9\omega_6 - \omega_{13}\omega_9$

$C_9 = 3v_1^2\omega_9^2\omega_6 - \omega_{13}c_s^2\omega_9\omega_6 + c_s^2\omega_9^2\omega_6 + 3\omega_{13}v_1^2\omega_6 - 3\omega_{13}v_1^2\omega_9\omega_6 + \omega_{13}c_s^2\omega_9 - \omega_9^2\omega_6 + \omega_{13}c_s^2\omega_6 + \omega_{13}\omega_9\omega_6 + 3\omega_{13}v_1^2\omega_9 - c_s^2\omega_9\omega_6 + \omega_9\omega_6 + \omega_9^2 - 3v_1^2\omega_9^2 - \omega_{13}\omega_6 - c_s^2\omega_9^2 - 3v_1^2\omega_9\omega_6 - \omega_{13}\omega_9$

$C_{10} = -12v_1^2\omega_9^2\omega_6 - 24\omega_{13}c_s^2\omega_9\omega_6 + 6\omega_{13}\omega_9\omega_6^2 + 36\omega_{13}c_s^2\omega_6^2 - 12\omega_9^2\omega_6^2 + 12\omega_{13}v_1^2\omega_6^2 + 12c_s^2\omega_9^2\omega_6^2 - 24\omega_{13}c_s^2\omega_9^2 - 6\omega_{13}v_1^2\omega_9\omega_6^2 - 12c_s^2\omega_9^2\omega_6 + 12\omega_9^2\omega_6 + 12v_1^2\omega_9^2\omega_6^2 - 18\omega_{13}c_s^2\omega_9\omega_6^2 - 6\omega_{13}\omega_9^2\omega_6 - 11\omega_{13}c_s^2\omega_9^2\omega_6^2 - 12v_1^2\omega_9\omega_6^2 + 6\omega_{13}v_1^2\omega_9^2\omega_6 - 12\omega_{13}\omega_6^2 + 12\omega_9\omega_6^2 - 3\omega_{13}v_1^2\omega_9^2\omega_6^2 - 12c_s^2\omega_9\omega_6^2 + 42\omega_{13}c_s^2\omega_9^2\omega_6 + 3\omega_{13}\omega_9^2\omega_6^2$

$C_{11} = -6v_3^2\omega_{18}\omega_6 + 6\omega_{18}\omega_6 - 18c_s^2\omega_{18}\omega_6 - 12v_3^2\omega_{11} + 36c_s^2\omega_{18} + 12\omega_{11} - 12\omega_{18} + v_3^2\omega_{11}\omega_{18}\omega_6 - 36c_s^2\omega_{11} - \omega_{11}\omega_{18}\omega_6 - 6\omega_{11}\omega_6 + 12v_3^2\omega_{18} + 18c_s^2\omega_{11}\omega_6 + 3c_s^2\omega_{11}\omega_{18}\omega_6 + 6v_3^2\omega_{11}\omega_6$

$C_{12} = 3v_3^2\omega_{18}\omega_6 - 6v_3^2\omega_6 - 3\omega_{18}\omega_6 + 15c_s^2\omega_{18}\omega_6 - 3c_s^2\omega_{18}\omega_6^2 + \omega_{18}\omega_6^2 + 3v_3^2\omega_6^2 - 12c_s^2\omega_{18} - v_3^2\omega_{18}\omega_6^2 - 3\omega_6^2 - 6c_s^2\omega_6 + 3c_s^2\omega_6^2 + 6\omega_6$

$C_{13} = -18v_3^2\omega_{18}\omega_6 + 6\omega_{18}\omega_6 - 6c_s^2\omega_{18}\omega_6 - 36v_3^2\omega_{11} + 12c_s^2\omega_{18} + 12\omega_{11} - 12\omega_{18} + 3v_3^2\omega_{11}\omega_{18}\omega_6 - 12c_s^2\omega_{11} - \omega_{11}\omega_{18}\omega_6 - 6\omega_{11}\omega_6 + 36v_3^2\omega_{18} + 6c_s^2\omega_{11}\omega_6 + c_s^2\omega_{11}\omega_{18}\omega_6 + 18v_3^2\omega_{11}\omega_6$

$C_{14} = 12 - 216v_1^4\omega_9 - 216c_s^4\omega_9 + 672v_1^2c_s^2 - 132c_s^2 + 82c_s^4\omega_9^2 - 9v_1^4\omega_9^3 - 156v_1^2 + 90v_1^4\omega_9^2 - 5c_s^4\omega_9^3 + 144v_1^4 + 144c_s^4 + 198c_s^2\omega_9 - \omega_9^3 - 34v_1^2c_s^2\omega_9^3 + 404v_1^2c_s^2\omega_9^2 + 8\omega_9^2 + 234v_1^2\omega_9 - 18\omega_9 - 1008v_1^2c_s^2\omega_9 - 98v_1^2\omega_9^2 + 6c_s^2\omega_9^3 - 78c_s^2\omega_9^2 + 10v_1^2\omega_9^3$

$C_{15} = 12 - 756v_1^4\omega_9 - 36c_s^4\omega_9 + 432v_1^2c_s^2 - 36c_s^2 + 14c_s^4\omega_9^2 - 29v_1^4\omega_9^3 - 252v_1^2 + 310v_1^4\omega_9^2 - c_s^4\omega_9^3 + 504v_1^4 + 24c_s^4 + 54c_s^2\omega_9 - \omega_9^3 - 18v_1^2c_s^2\omega_9^3 + 252v_1^2c_s^2\omega_9^2 + 8\omega_9^2 + 378v_1^2\omega_9 - 18\omega_9 - 648v_1^2c_s^2\omega_9 - 154v_1^2\omega_9^2 + 2c_s^2\omega_9^3 - 22c_s^2\omega_9^2 + 14v_1^2\omega_9^3$

$C_{16} = 8v_1^4\omega_9^2\omega_{12}^2 - 4c_s^2\omega_9^2\omega_{12}^2 + 8c_s^4\omega_5^2\omega_9^2\omega_{12} - 8c_s^2\omega_5^2\omega_{12}^2 - 32v_1^2\omega_5^2\omega_9^2\omega_{12} + 24v_1^4\omega_5^2\omega_{12}^2 + 20v_1^4\omega_5\omega_9^3\omega_{12} - 48v_1^2c_s^2\omega_5\omega_9^2\omega_{12} - 36v_1^4\omega_5^2\omega_9\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9\omega_{12}^2 + 4c_s^2\omega_5^2\omega_9^2 - 8c_s^2\omega_5\omega_9^3\omega_{12} - 4v_1^4\omega_5^2\omega_9^2 - 8v_1^4\omega_9^3\omega_{12} + 4c_s^2\omega_9^3\omega_{12} + 4v_1^4\omega_5^2\omega_9^3 + 8c_s^2\omega_5\omega_9^2\omega_{12}^2 - 4c_s^2\omega_5^2\omega_9^3 - 72v_1^2c_s^2\omega_5^2\omega_9\omega_{12} - 20v_1^4\omega_5\omega_9^2\omega_{12}^2 + 4c_s^4\omega_9^2\omega_{12}^2 - 8v_1^2\omega_9^2\omega_{12}^2 + 84v_1^2c_s^2\omega_5\omega_9^3\omega_{12} - 16v_1^4\omega_5\omega_9^2\omega_{12} - 24v_1^2\omega_5^2\omega_{12}^2 - 144v_1^2c_s^2\omega_5^2\omega_9\omega_{12}^2 + 8c_s^4\omega_5^2\omega_{12}^2 - 20v_1^2\omega_5\omega_9\omega_{12}^2 + 13v_1^2\omega_5^2\omega_9^3\omega_{12} + 4v_1^2\omega_5^2\omega_9^2 - 4c_s^4\omega_5^2\omega_9^2 - 4c_s^4\omega_5^2\omega_9^3\omega_{12} + 4c_s^4\omega_5\omega_9\omega_{12}^2 - 20v_1^4\omega_5^2\omega_9\omega_{12} - 84v_1^2c_s^2\omega_5\omega_9^2\omega_{12}^2 - 4c_s^4\omega_9^3\omega_{12} + 4c_s^2\omega_5^2\omega_9\omega_{12} + 8v_1^2\omega_9^3\omega_{12} + 4c_s^4\omega_5^2\omega_9^3 - 4v_1^2\omega_5^2\omega_9^3 + 4c_s^4\omega_5^2\omega_9^2\omega_{12}^2 - 24v_1^2c_s^2\omega_5\omega_9^3 - 13v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 36v_1^2c_s^2\omega_9^3\omega_{12} - 51v_1^2c_s^2\omega_5^2\omega_9^2\omega_{12} + 32v_1^4\omega_5^2\omega_9^2\omega_{12} + 72v_1^2c_s^2\omega_5\omega_9\omega_{12}^2 - 8c_s^2\omega_5^2\omega_9^2\omega_{12} + 8c_s^4\omega_5\omega_9^3\omega_{12} + 4v_1^2\omega_5\omega_9^3 - 12c_s^4\omega_5^2\omega_9\omega_{12}^2 - 4c_s^4\omega_5\omega_9^3 + 36v_1^2\omega_5^2\omega_9\omega_{12}^2 - 20v_1^2\omega_5\omega_9^3\omega_{12} + 24v_1^2c_s^2\omega_5^2\omega_9^3 + 96v_1^2c_s^2\omega_5^2\omega_{12}^2 + 36v_1^2c_s^2\omega_9^2\omega_{12}^2 + 51v_1^2c_s^2\omega_5^2\omega_9^2\omega_{12}^2 - 24v_1^2c_s^2\omega_5^2\omega_9^2 + 20v_1^2\omega_5\omega_9^2\omega_{12}^2 - 8c_s^4\omega_5\omega_9^2\omega_{12}^2 + 16v_1^2\omega_5\omega_9^2\omega_{12} + 4c_s^2\omega_5\omega_9^3 - 4c_s^2\omega_5\omega_9\omega_{12}^2 + 4c_s^2\omega_5^2\omega_9^3\omega_{12} - 4v_1^4\omega_5\omega_9^3 - 13v_1^4\omega_5^2\omega_9^3\omega_{12} + 120v_1^2c_s^2\omega_5^2\omega_9^2\omega_{12} + 20v_1^4\omega_5\omega_9\omega_{12}^2 - 4c_s^4\omega_5^2\omega_9\omega_{12} + 20v_1^2\omega_5^2\omega_9\omega_{12} + 13v_1^4\omega_5^2\omega_9^2\omega_{12}^2 - 4c_s^2\omega_5^2\omega_9^2\omega_{12}^2$

$C_{17} = 20c_s^2\omega_9^2\omega_{12}^2 + 48c_s^2\omega_5^2\omega_{12}^2 + 104v_1^2\omega_5^2\omega_9^2\omega_{12} + 8\omega_5^2\omega_9^2 - 12\omega_9^2\omega_{12}^2 - 72c_s^2\omega_5^2\omega_9\omega_{12}^2 - 16c_s^2\omega_5^2\omega_9^2 + 44c_s^2\omega_5\omega_9^3\omega_{12} + 28\omega_5\omega_9^2\omega_{12}^2 - 32\omega_5^2\omega_{12}^2 - 8\omega_5^2\omega_9^3 - 20c_s^2\omega_9^3\omega_{12} + 48\omega_9^2\omega_9\omega_{12}^2 - 44c_s^2\omega_5\omega_9^2\omega_{12}^2 - 28\omega_5\omega_9^3\omega_{12} + 16c_s^2\omega_5^2\omega_9^3 + 12\omega_9^3\omega_{12} - 16c_s^2\omega_5\omega_9^2\omega_{12} + 24\omega_5^2\omega_9\omega_{12} + 28v_1^2\omega_9^2\omega_{12}^2 + 80v_1^2\omega_5^2\omega_{12}^2 + 64v_1^2\omega_5\omega_9\omega_{12}^2 - 43v_1^2\omega_5^2\omega_9^3\omega_{12} - 16v_1^2\omega_5^2\omega_9^2 + 16\omega_5\omega_9^2\omega_{12} - 32c_s^2\omega_5^2\omega_9\omega_{12} - 28v_1^2\omega_9^3\omega_{12} + 16v_1^2\omega_5^2\omega_9^3 + 43v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 56c_s^2\omega_5^2\omega_9^2\omega_{12} - 16v_1^2\omega_5\omega_9^3 - 120v_1^2\omega_5^2\omega_9\omega_{12}^2 + 68v_1^2\omega_5\omega_9^3\omega_{12} - 40\omega_5^2\omega_9^2\omega_{12} - 68v_1^2\omega_5\omega_9^2\omega_{12}^2 - 48v_1^2\omega_5\omega_9^2\omega_{12} + 8\omega_5\omega_9^3 - 16c_s^2\omega_5\omega_9^3 + 32c_s^2\omega_5\omega_9\omega_{12}^2 - 25c_s^2\omega_5^2\omega_9^3\omega_{12} - 17\omega_5^2\omega_9^2\omega_{12}^2 - 64v_1^2\omega_5^2\omega_9\omega_{12} - 24\omega_5\omega_9\omega_{12}^2 + 25c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 17\omega_5^2\omega_9^3\omega_{12}$

$C_{18} = 12v_1^2\omega_5^3\omega_9^2 + 12c_s^4\omega_5^2\omega_9^2\omega_{12} + 24v_1^2\omega_5^2\omega_9^2\omega_{12} - 24v_1^4\omega_5\omega_9^3\omega_{12} - 72v_1^2\omega_5^3\omega_{12}^2 + 12c_s^4\omega_5^3\omega_{12}^2 + 4v_1^4\omega_5^3\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9\omega_{12}^2 + 12c_s^4\omega_9^3\omega_{12}^2 - 12c_s^2\omega_5\omega_9^3\omega_{12} + 60v_1^2c_s^2\omega_5^3\omega_9^2\omega_{12}^2 - 12c_s^4\omega_5^3\omega_9\omega_{12}^2 + 18v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 90v_1^2\omega_5^3\omega_9\omega_{12}^2 + 13c_s^4\omega_5^2\omega_9^3\omega_{12}^2 - 12v_1^2\omega_5^3\omega_9^3 + 60v_1^4\omega_5^3\omega_9^2\omega_{12} - 12v_1^4\omega_5^2\omega_9^3 - 21v_1^2c_s^2\omega_5^3\omega_9^3\omega_{12} + 102v_1^2c_s^2\omega_5\omega_9^3\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^2\omega_{12} + 12v_1^2c_s^2\omega_5^3\omega_9^3\omega_{12}^2 + 19v_1^4\omega_5^3\omega_9^2\omega_{12}^2 - 12v_1^4\omega_5^3\omega_9^2 - c_s^2\omega_5^3\omega_9^2\omega_{12}^2 - 12v_1^2c_s^2\omega_5\omega_9^3\omega_{12} - 108v_1^2c_s^2\omega_5^2\omega_9\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{12}^2 + 72v_1^4\omega_5^3\omega_{12}^2 - 48v_1^2\omega_5^2\omega_9^3\omega_{12} + 36v_1^2\omega_5^3\omega_9\omega_{12} - 18c_s^4\omega_5^2\omega_9^3\omega_{12} - 6c_s^2\omega_5^3\omega_9^3\omega_{12} - 48v_1^2c_s^2\omega_5\omega_9^2\omega_{12}^2 + 12v_1^4\omega_5\omega_9^3\omega_{12}^2 + 54v_1^2c_s^2\omega_5^3\omega_9^2\omega_{12} + 6c_s^2\omega_5\omega_9^3\omega_{12}^2 + 12v_1^4\omega_5^3\omega_9^3 - 27v_1^4\omega_5^3\omega_9^3\omega_{12} + 12v_1^2\omega_5^2\omega_9^3 + 6c_s^4\omega_5^2\omega_9^2\omega_{12}^2 - 12v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 30v_1^2c_s^2\omega_5^2\omega_9^3\omega_{12} - 24v_1^4\omega_5^2\omega_9^2\omega_{12} - 12c_s^2\omega_5^2\omega_9^2\omega_{12} - 36v_1^2c_s^2\omega_5^3\omega_9\omega_{12} + 12c_s^4\omega_5\omega_9^3\omega_{12} - 4v_1^2\omega_5^3\omega_9^3\omega_{12}^2 - 12c_s^4\omega_5^2\omega_9\omega_{12}^2 - c_s^4\omega_5^3\omega_9^3\omega_{12}^2 + 24v_1^2\omega_5\omega_9^3\omega_{12} - 12v_1^2c_s^2\omega_5^2\omega_9^3 - 90v_1^4\omega_5^3\omega_9\omega_{12}^2 - 5c_s^2\omega_5^2\omega_9^3\omega_{12}^2 + 162v_1^2c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^3\omega_9\omega_{12}^2 - 18v_1^4\omega_5^2\omega_9^3\omega_{12}^2 - 6c_s^4\omega_5^3\omega_9^2\omega_{12} - 60v_1^2\omega_5^3\omega_9^2\omega_{12} + c_s^4\omega_5^3\omega_9^2\omega_{12}^2 + 12v_1^2c_s^2\omega_5^3\omega_9^3 - 19v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 36v_1^4\omega_5^3\omega_9\omega_{12} + 18c_s^2\omega_5^2\omega_9^3\omega_{12} + 48v_1^4\omega_5^2\omega_9^3\omega_{12} - 12v_1^2c_s^2\omega_5^2\omega_9^2\omega_{12} + 27v_1^2\omega_5^3\omega_9^3\omega_{12} - 24c_s^4\omega_5\omega_9^3\omega_{12}^2 - 12v_1^2\omega_5\omega_9^3\omega_{12}^2 + 6c_s^4\omega_5^3\omega_9^3\omega_{12} - 12v_1^2c_s^2\omega_5^3\omega_9^2 + 12v_1^4\omega_5^2\omega_9^2\omega_{12}^2 - 48v_1^2c_s^2\omega_9^3\omega_{12}^2 - 81v_1^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2 + 252v_1^2c_s^2\omega_5^3\omega_{12}^2 - 306v_1^2c_s^2\omega_5^3\omega_9\omega_{12}^2 - 6c_s^2\omega_5^2\omega_9^2\omega_{12}^2$

$C_{19} = 12c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 6v_2^2v_1^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 24v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18v_2^2c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12v_2^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - 36v_2^2c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6v_2^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 36v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 12v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^3\omega_{12}^2 + 36c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 - 36v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 12v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 18c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 36v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 150c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 36v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 36c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 84c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 36c_s^4\omega_5^2\omega_9^3\omega_{12}^2 - 36c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 18c_s^4\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 36c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12} + 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 36v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 - 42c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5\omega_{15}\omega_9^3\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 36v_2^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 6v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 18v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6v_1^2c_s^2\omega_5^3\omega_9^3\omega_{12}^2 - 88c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 36c_s^4\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 18c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 12v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 12v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 36v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 72v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 24v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 18v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 24v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 72v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 36v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 12v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 18v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 6v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 36v_2^2c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 12v_2^2v_1^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 72v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 24v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 54v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 180c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 6v_2^2\omega_5^3\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} + 36v_2^2c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 6v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 18v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 108v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 12v_2^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 6v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 36v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 18v_2^2c_s^2\omega_5^3\omega_9^3\omega_{12}^2 + 18v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$

$6v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 96c_s^4\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 18c_s^4\omega_5^3\omega_9^3\omega_{12}^2 + 5c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 +$
$12v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 18v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6v_2^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 12v_1^2c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 12v_2^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 6v_1^2c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 -$
$18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 24v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 36v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} -$
$12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 6v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 42c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$12v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 24v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12v_2^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$12v_2^2\omega_5^2\omega_9^3\omega_{12}^2 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 6v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 18v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} +$
$12v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 30c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12v_2^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} + 12v_1^2c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} +$
$12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12v_1^2c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 6v_2^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 6v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12v_2^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - 12v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 -$
$12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 12v_1^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2 + v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 72v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 48c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 24v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}$

$C_{20} = 12c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 18v_2^2v_1^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 24v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6v_2^2c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 +$
$60v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36v_2^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - 12v_2^2c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18v_2^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 36v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 +$
$12v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 84v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^3\omega_{12}^2 - 12v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 36v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 6c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 -$
$12v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 24c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 36v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 42v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 36v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 -$
$12v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 48v_1^2c_s^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} + 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} -$
$12c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^4\omega_5^2\omega_9^3\omega_{12}^2 - 12c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 6c_s^4\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12} + 36v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 +$
$12v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 - 24c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 72v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 +$
$12v_2^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 18v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 18v_1^2c_s^2\omega_5^3\omega_9^3\omega_{12}^2 - 4c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12c_s^4\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 6c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 -$
$12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 84v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 36v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} +$
$12v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 24v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 72v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 132v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 -$
$72v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 24v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 12v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 60v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} -$
$36v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 6v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 18v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 12v_2^2c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 36v_2^2v_1^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 24v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$
$72v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 54v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 18c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 +$
$6v_2^2\omega_5^3\omega_9^3\omega_{12}^2 + 36v_2^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 12v_2^2c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 6v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 180v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 108v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} -$
$12c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 36v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 36v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 12v_2^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 78v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 36v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} -$
$6v_2^2c_s^2\omega_5^3\omega_9^3\omega_{12}^2 + 6v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 18v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^4\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 6c_s^4\omega_5^3\omega_9^3\omega_{12}^2 -$
$c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 24v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 18v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 108v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6v_2^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 -$
$36v_1^2c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 12v_2^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 18v_1^2c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 18v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 24v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$12c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 12v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 36v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 18v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 36v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} +$
$12v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 24v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 24v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 36v_2^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$12v_2^2\omega_5^2\omega_9^3\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 6v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 144v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} +$
$12v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12v_2^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} +$
$36v_1^2c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 36v_1^2c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 6v_2^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 18v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12v_2^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 +$
$24v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 36v_1^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2 + 24v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 72v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}$

$C_{21} = -3\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12} - \omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 - 9\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} -$
$2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 4\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 4\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 6\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} - 6\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} -$
$2\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9^3\omega_{12}^2 + 5\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 3\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 2\omega_{10}v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 2\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 9\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} +$
$11\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} + 2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 6\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 2\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 16\omega_{10}c_s^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 -$
$4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3 + 6\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} - 15\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 5\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 4\omega_{10}v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 -$
$8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 4\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + \omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 + 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 +$
$2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3 - \omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 - 8\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 - 4\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 4\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12} +$
$4c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 26\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 - \omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 2\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 + 4\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9^3\omega_{12}^2 -$
$2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2 + 2\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + \omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 - 4\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 -$
$4\omega_{10}c_s^2\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2 - 4\omega_{10}v_1^2\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2 - 7\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 4c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 -$
$4\omega_{10}v_1^2\omega_5^3\omega_{15}^2\omega_9^3\omega_{12} - 4\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^3\omega_{12} + 4\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 +$
$4\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3 + 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3 + 13\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 7\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 -$
$2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 2\omega_{10}\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 2\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 2\omega_{10}v_1^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 8\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3 -$
$4\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3 + 8\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 4\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} + 4\omega_{10}v_1^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} + 3\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} - 4\omega_{10}\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 +$
$3\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + \omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}v_1^2\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2 +$
$2\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2 - 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} - 3\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} - \omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 4\omega_{10}c_s^2\omega_5^2\omega_{15}^2\omega_9^3\omega_{12} + 4\omega_{10}v_1^2\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}$

$C_{22} = 27\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 24\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 36\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{15}^2\omega_9 - 18\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$36\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 24\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} +$
$36v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 5\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$12\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}^2 + 9\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 24\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 -$
$12\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 18\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12} - 12\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{15}^2\omega_9 +$
$36\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9 + 156\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 9\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$12\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 15\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9 + 3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$6\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12} + 12\omega_{10}^2v_2^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$45\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 6\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$12\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 15\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 6\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 15\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12} +$
$6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2 - 12v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 -$
$60\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 15\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2\omega_9 + 12\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 3\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} +$

$$12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9+6\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12}-36\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9+6\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}+144\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}-$$
$$\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-6\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-24\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}+36\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}^2-96\omega_{10}^2c_s^4\omega_{21}\omega_{15}^2\omega_9\omega_{12}+$$
$$12\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}-72\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}-36\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}+36\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-$$
$$18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}-48\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}+12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9-18\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_9\omega_{12}+12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9-$$
$$6\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12}-6\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}-24\omega_{10}^2v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}-12\omega_{10}^2v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}+72\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}-$$
$$6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}+12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}-24\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}+24\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}+12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}-$$
$$36\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}-12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2+6\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}+6\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}+12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2+18\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}+$$
$$48\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}+36\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2-18\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}+3\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-72\omega_{10}^2v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}-$$
$$36\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9+6v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}-6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}-42\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}+$$
$$\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-36\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}^2\omega_9+54\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+12\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15}^2\omega_9-12\omega_{10}v_2^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}+$$
$$24\omega_{10}v_2^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}-12\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}-12\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12}+18\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}+12\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_9\omega_{12}-$$
$$18\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}-12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9+18\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-6v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-108\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+$$
$$12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}+12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12}+36\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9+36\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}-18\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12}+$$
$$6\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-6\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}^2\omega_{12}+6\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}-6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}+6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_{12}+72\omega_{10}v_1^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}-$$
$$12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2+36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9-12\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}-12\omega_{10}^2v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12}+12\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}+12\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12}-$$
$$36\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9-12\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2-36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+18\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-12\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}^2\omega_9+$$
$$12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9-18v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9-12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9+36\omega_{10}^2c_s^4\omega_5^2\omega_{15}\omega_9\omega_{12}+18\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}$$

$$C_{23}=90\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2-24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}-42\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-96\omega_{10}^2c_s^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+$$
$$24\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}-12\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2+12\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2-12\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-$$
$$12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2+3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-72\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2-12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2-18c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2+$$
$$18\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-12\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}+84\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2-36\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2+12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-$$
$$6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2+12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}+12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2-12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2+12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+$$
$$4\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+24\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}-18\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-48\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2+18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2+$$
$$48\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-12\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-12\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2-24\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}+$$
$$60\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}+12\omega_{10}^2v_2^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+12v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2+24\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}-$$
$$24\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2+24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2-12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+24\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2-24\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2+24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2+$$
$$\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-84\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-24\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2+6\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2+6\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+24\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}-$$
$$24\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}+24\omega_{10}^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2-66\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2+72\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}+24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}-18\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-$$
$$24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2+66\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2-\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9-12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2+$$
$$12\omega_{10}v_2^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-36\omega_{10}^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2-24\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}+12\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2+24\omega_{10}^2v_2^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2-$$
$$24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}-12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2-6v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+36\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2+12\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2-24\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2-$$
$$132\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}+24\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}-12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2-66\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+12\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2+$$
$$12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2-24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2+12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-12\omega_{10}^2v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2-24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2-$$
$$12\omega_{10}^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2+12\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{12}^2-24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2-12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2+12\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}-$$
$$12\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2-4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2+36c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+156\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2$$

$$C_{24}=9\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+24\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}+12\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{15}^2\omega_9-6\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}+36v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-$$
$$12\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}-72\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}-12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2+12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}+12\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}+$$
$$12v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-36\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9-36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9+12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2-15\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+$$
$$36\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}^2+27\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+72\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}-12\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9\omega_{12}-12\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2-$$
$$36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}+6\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}-36\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}-36\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12}+36\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{15}\omega_9+$$
$$12\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9+18\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}+5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-9\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+36\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9+$$
$$36\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9-6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}-6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}+15\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-12\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9-6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}+$$
$$18\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}+18\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}-12\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}+60\omega_{10}^2v_2^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}+\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-$$
$$15\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-18\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}+6\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9\omega_{12}+18\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}+12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}+$$
$$15\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-18\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}-5\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+12\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}+$$
$$6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}-12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}+36\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2-12v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-36\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2-5\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-$$
$$45\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-36\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2\omega_9+36\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}+30\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}+12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9+$$
$$6\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12}-48\omega_{10}^2v_2^2c_s^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9+6\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}+48\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}-$$
$$6\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-24\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}+12\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}^2-12\omega_{10}^2c_s^4\omega_{21}\omega_{15}^2\omega_9\omega_{12}+12\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}-$$
$$24\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}-12\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}+36\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}-$$
$$48\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}+12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9-6\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_9\omega_{12}+12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9-18\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12}-$$
$$18\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}-72\omega_{10}^2v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}+60\omega_{10}^2v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}+24\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}+12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}-$$
$$24\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}+24\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}-12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}-12\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}-12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2+$$
$$18\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}-12\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}+12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2-102\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}+144\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}+$$
$$12\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2-6\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}^2\omega_{12}-\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-24\omega_{10}^2v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}-12\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9+6v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-$$
$$6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}-18\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}-12\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}^2\omega_9+18\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+36\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15}^2\omega_9-$$
$$36\omega_{10}v_2^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}+72\omega_{10}v_2^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}+24\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}-36\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12}+6\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}-$$
$$6\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}-12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9+6\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-18v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-36\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+$$
$$12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12}+12\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9+12\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}-6\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12}+18\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-$$
$$18\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}^2\omega_{12}+6\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}-6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}+6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_{12}+24\omega_{10}v_1^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}-12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2+$$
$$12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9-12\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}-12\omega_{10}^2v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12}+36\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}+36\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12}-12\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9-$$
$$36\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2-108\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+54\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-36\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}^2\omega_9+12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9-$$

$6v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{10}^2c_s^4\omega_5^2\omega_{15}\omega_9\omega_{12} + 6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}$

$C_{25} = -36v_2^4\omega_5^2\omega_{15}^2 + 3\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2 + 48\omega_{10}^2v_2^2\omega_{15} + 150\omega_{10}v_2^2c_s^2\omega_5^2\omega_{15}^2 + 48\omega_{10}v_2^2\omega_5\omega_{15} - 24c_s^2\omega_5\omega_{15}^2 - 24\omega_{10}^2c_s^4\omega_5 - 12\omega_{10}^2v_2^2\omega_5^2 + 48\omega_{10}v_2^4\omega_{15}^2 - 48\omega_{10}^2c_s^2\omega_5\omega_{15} - 14\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 30\omega_{10}^2v_2^4\omega_5^2\omega_{15} - 12\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15}^2 - 96\omega_{10}v_2^4\omega_5\omega_{15}^2 - 126\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15} + 36v_2^2\omega_5^2\omega_{15}^2 - 3\omega_{10}^2v_2^4\omega_5^2\omega_{15}^2 - 48\omega_{10}v_2^4\omega_5\omega_{15} + 24c_s^4\omega_5\omega_{15}^2 + 288v_2^2c_s^2\omega_5\omega_{15}^2 + 48\omega_{10}^2c_s^4\omega_5\omega_{15} + 12\omega_{10}^2c_s^4\omega_5^2 - 24\omega_{10}c_s^2\omega_{15}^2 + 24\omega_{10}^2v_2^2\omega_5 + 14\omega_{10}c_s^4\omega_5^2\omega_{15}^2 + 30\omega_{10}^2v_2^2\omega_5^2\omega_{15} + 216\omega_{10}v_2^2c_s^2\omega_{15}^2 + 72\omega_{10}v_2^2c_s^2\omega_5^2\omega_{15} - 24\omega_{10}^2c_s^4\omega_{15} + 96\omega_{10}v_2^2\omega_5\omega_{15}^2 + 72\omega_{10}^2v_2^2c_s^2\omega_5^2 - 12\omega_{10}^2c_s^4\omega_5^2\omega_{15} - 48\omega_{10}c_s^4\omega_5\omega_{15}^2 - 144\omega_{10}v_2^2c_s^2\omega_5\omega_{15} - 96\omega_{10}^2v_2^2\omega_5\omega_{15} - 216\omega_{10}^2v_2^2c_s^2\omega_{15} - 36\omega_{10}v_2^2\omega_5^2\omega_{15}^2 - 48\omega_{10}^2v_2^4\omega_{15} - 72v_2^2\omega_5\omega_{15}^2 + 432\omega_{10}^2v_2^2c_s^2\omega_5\omega_{15} + 24\omega_{10}v_2^4\omega_5^2\omega_{15} + \omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 - 12c_s^4\omega_5^2\omega_{15}^2 + 24\omega_{10}^2c_s^2\omega_5 - 144v_2^2c_s^2\omega_5^2\omega_{15}^2 + 12\omega_{10}^2v_2^4\omega_5^2 - 48\omega_{10}v_2^2\omega_{15}^2 - 12\omega_{10}^2c_s^2\omega_5^2 + 12\omega_{10}^2c_s^2\omega_5^2\omega_{15} + 24\omega_{10}c_s^4\omega_{15}^2 - 24\omega_{10}^2v_2^4\omega_5 + 48\omega_{10}c_s^2\omega_5\omega_{15}^2 + 96\omega_{10}^2v_2^2\omega_5\omega_{15} + 24\omega_{10}^2c_s^2\omega_{15} + 36\omega_{10}v_2^4\omega_5^2\omega_{15}^2 - 432\omega_{10}v_2^2c_s^2\omega_5\omega_{15}^2 + 72v_2^4\omega_5\omega_{15}^2 - 24\omega_{10}v_2^2\omega_5^2\omega_{15} - 144\omega_{10}^2v_2^2c_s^2\omega_5 - \omega_{10}^2c_s^4\omega_5^2\omega_{15}^2 + 12c_s^2\omega_5^2\omega_{15}^2$

$C_{26} = -24v_2^4\omega_5^2\omega_{15}^2 + 12c_s^2\omega_5\omega_{15}^2 - 24v_2^4\omega_5^2 - 3v_2^2\omega_5^3\omega_{15}^2 + 24c_s^4\omega_5\omega_{15} - 18v_2^4\omega_5^3\omega_{15} - 24v_2^2c_s^2\omega_5\omega_{15} + 12v_2^4\omega_5^3 - 72v_2^2\omega_5^2\omega_{15} + 24v_2^2\omega_5^2\omega_{15}^2 - 48c_s^4\omega_5\omega_{15}^2 + 3v_2^4\omega_5^3\omega_{15}^2 + 156v_2^2c_s^2\omega_5\omega_{15}^2 - 24c_s^2\omega_5\omega_{15} + 18v_2^2\omega_5^3\omega_{15} + 72v_2^4\omega_5^2\omega_{15} + 24c_s^2\omega_5^2\omega_{15} - 12v_2^2c_s^2\omega_5^3\omega_{15} - 48v_2^4\omega_5\omega_{15} - 12v_2^2\omega_5^3 + 6c_s^4\omega_5^3\omega_{15} - 24v_2^2\omega_5\omega_{15}^2 + 24c_s^4\omega_{15}^2 + c_s^2\omega_5^3\omega_{15}^2 - 96v_2^2c_s^2\omega_{15}^2 + 24c_s^4\omega_5^2\omega_{15}^2 + 24v_2^2\omega_5^2 - 72v_2^2c_s^2\omega_5^2\omega_{15}^2 - 24c_s^4\omega_5^2\omega_{15} - 24v_2^2c_s^2\omega_5^2 + 48v_2^2c_s^2\omega_5^2\omega_{15} + 48v_2^2\omega_5\omega_{15} - 6c_s^2\omega_5^3\omega_{15} + 6v_2^2c_s^2\omega_5^3\omega_{15}^2 + 24v_2^4\omega_5\omega_{15}^2 + 12v_2^2c_s^2\omega_5^3 - 3c_s^4\omega_5^3\omega_{15}^2 - 8c_s^2\omega_5^2\omega_{15}^2$

$C_{27} = -5\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2 - 84\omega_{10}^2v_2^2\omega_{15} - 48\omega_5\omega_{15}^2 - 72\omega_{10}v_2^2\omega_5\omega_{15} + 72c_s^2\omega_5\omega_{15}^2 + 24\omega_{10}^2v_2^2\omega_5^2 + 24\omega_{10}\omega_5\omega_{15} + 120\omega_{10}^2c_s^2\omega_5\omega_{15} + 39\omega_{10}c_s^2\omega_5^2\omega_{15}^2 + 21\omega_{10}^2\omega_5^2\omega_{15} - 36\omega_{10}\omega_{15}^2 + 2\omega_{10}^2\omega_5^2\omega_{15}^2 - 60v_2^2\omega_5^2\omega_{15}^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{15} + 60\omega_{10}c_s^2\omega_{15}^2 - 48\omega_{10}^2v_2^2\omega_5 + 72\omega_{10}\omega_5\omega_{15}^2 - 51\omega_{10}^2v_2^2\omega_5^2\omega_{15} - 168\omega_{10}v_2^2\omega_5\omega_{15}^2 - 25\omega_{10}\omega_5^2\omega_{15}^2 + 168\omega_{10}^2v_2^2\omega_5\omega_{15} + 61\omega_{10}v_2^2\omega_5^2\omega_{15}^2 + 36\omega_{10}^2\omega_{15} + 120v_2^2\omega_5\omega_{15}^2 - 3\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 - 48\omega_{10}^2c_s^2\omega_5 - 12\omega_{10}^2\omega_5^2 + 84\omega_{10}v_2^2\omega_{15}^2 - 24\omega_{10}c_s^2\omega_5\omega_{15} + 24\omega_{10}^2c_s^2\omega_5^2 - 33\omega_{10}^2c_s^2\omega_5^2\omega_{15} + 24\omega_{10}^2\omega_5 - 120\omega_{10}c_s^2\omega_5\omega_{15}^2 - 72\omega_{10}^2\omega_5\omega_{15} - 60\omega_{10}^2c_s^2\omega_{15} + 24\omega_5^2\omega_{15}^2 + 36\omega_{10}v_2^2\omega_5^2\omega_{15} - 36c_s^2\omega_5^2\omega_{15}^2 - 12\omega_{10}\omega_5^2\omega_{15}$

$C_{28} = -4\omega_{13}^2c_s^2\omega_9^2\omega_6^2 - 144\omega_{13}^2v_1^2c_s^2\omega_9\omega_6^2 + 13\omega_{13}^2v_1^4\omega_9^2\omega_6^2 + 4\omega_{13}c_s^2\omega_9^3 + 4c_s^2\omega_9^3\omega_6 - 4v_1^4\omega_9^3\omega_6 - 4v_1^2\omega_9^3\omega_6^2 + 4c_s^4\omega_9^3\omega_6^2 - 4\omega_{13}c_s^4\omega_9\omega_6^2 + 4c_s^2\omega_9^2\omega_6^2 + 20\omega_{13}v_1^2\omega_9\omega_6^2 - 4v_1^4\omega_9^2\omega_6^2 + 8\omega_{13}v_1^2\omega_9^3 + 20\omega_{13}^2v_1^2\omega_9^2\omega_6 - 8\omega_{13}^2c_s^4\omega_9^2\omega_6 - 36\omega_{13}v_1^2c_s^2\omega_9^3 - 72\omega_{13}v_1^2c_s^2\omega_9\omega_6^2 - 13\omega_{13}^2v_1^2\omega_9^2\omega_6^2 + 4\omega_{13}^2c_s^4\omega_9^2\omega_6^2 + 4v_1^2\omega_9^3\omega_6 + 4\omega_{13}^2c_s^4\omega_9^2 - 4c_s^4\omega_9^3\omega_6 + 24\omega_{13}^2v_1^4\omega_6^2 - 4c_s^2\omega_9^3\omega_6^2 + 4v_1^4\omega_9^3\omega_6^2 - 20\omega_{13}v_1^4\omega_9\omega_6^2 + 4v_1^2\omega_9^2\omega_6^2 + 4\omega_{13}c_s^2\omega_9\omega_6^2 - 4c_s^4\omega_9^2\omega_6^2 + 8\omega_{13}^2c_s^2\omega_9^2\omega_6 + 8\omega_{13}^2v_1^4\omega_9^2 - 20\omega_{13}^2v_1^4\omega_9^2\omega_6 + 8\omega_{13}^2c_s^4\omega_6^2 + 72\omega_{13}^2v_1^2c_s^2\omega_9\omega_6 - 51\omega_{13}v_1^2c_s^2\omega_9^3\omega_6^2 + 36\omega_{13}^2v_1^2c_s^2\omega_9^2 + 13\omega_{13}v_1^2\omega_9^3\omega_6^2 - 4\omega_{13}c_s^4\omega_9^3\omega_6^2 - 8\omega_{13}c_s^2\omega_9^2\omega_6^2 + 32\omega_{13}v_1^4\omega_9^2\omega_6^2 - 84\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6 + 20\omega_{13}^2v_1^4\omega_9\omega_6 - 24v_1^2c_s^2\omega_9^2\omega_6^2 - 8\omega_{13}v_1^4\omega_9^3 - 4\omega_{13}^2c_s^2\omega_9\omega_6 + 16\omega_{13}v_1^2\omega_9^2\omega_6 - 12\omega_{13}^2c_s^4\omega_9\omega_6^2 - 48\omega_{13}v_1^2c_s^2\omega_9^2\omega_6 + 36\omega_{13}^2v_1^2\omega_9\omega_6^2 + 96\omega_{13}^2v_1^2c_s^2\omega_6^2 - 24v_1^2c_s^2\omega_9^3\omega_6 - 8\omega_{13}c_s^2\omega_9^3\omega_6 - 4\omega_{13}c_s^4\omega_9^3 + 20\omega_{13}v_1^4\omega_9^3\omega_6 + 24v_1^2c_s^2\omega_9^3\omega_6^2 + 4\omega_{13}c_s^2\omega_9^3\omega_6^2 - 13\omega_{13}v_1^4\omega_9^3\omega_6^2 - 32\omega_{13}v_1^2\omega_9^2\omega_6^2 + 8\omega_{13}c_s^4\omega_9^2\omega_6^2 + 120\omega_{13}v_1^2c_s^2\omega_9^2\omega_6^2 - 8\omega_{13}^2v_1^2\omega_9^2 + 4\omega_{13}^2c_s^4\omega_9\omega_6 - 8\omega_{13}^2c_s^2\omega_6^2 - 20\omega_{13}^2v_1^2\omega_9\omega_6 - 16\omega_{13}v_1^4\omega_9^2\omega_6 - 36\omega_{13}^2v_1^4\omega_9\omega_6^2 + 51\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6^2 + 12\omega_{13}^2c_s^2\omega_9\omega_6^2 + 84\omega_{13}v_1^2c_s^2\omega_9^3\omega_6 - 4\omega_{13}^2c_s^2\omega_9^2 - 20\omega_{13}v_1^2\omega_9^3\omega_6 - 24\omega_{13}^2v_1^2\omega_6^2 + 8\omega_{13}c_s^4\omega_9^3\omega_6$

$C_{29} = 25\omega_{13}^2c_s^2\omega_9^2\omega_6^2 + 8\omega_9^3\omega_6 + 24\omega_{13}\omega_9\omega_6^2 - 20\omega_{13}c_s^2\omega_9^3 - 16c_s^2\omega_9^3\omega_6 + 8\omega_9^2\omega_6^2 + 16v_1^2\omega_9^3\omega_6^2 - 16c_s^2\omega_9^2\omega_6^2 - 64\omega_{13}v_1^2\omega_9\omega_6^2 - 28\omega_{13}v_1^2\omega_9^3 - 68\omega_{13}^2v_1^2\omega_9^2\omega_6 - 17\omega_{13}^2\omega_9^2\omega_6^2 - 32\omega_{13}^2\omega_6^2 + 28\omega_{13}^2\omega_9^2\omega_6 + 43\omega_{13}^2v_1^2\omega_9^2\omega_6^2 - 16v_1^2\omega_9^3\omega_6 - 12\omega_{13}^2\omega_9^2 + 16c_s^2\omega_9^3\omega_6^2 - 16v_1^2\omega_9^2\omega_6^2 - 32\omega_{13}c_s^2\omega_9\omega_6^2 - 44\omega_{13}^2c_s^2\omega_9^2\omega_6 - 8\omega_9^3\omega_6^2 + 16\omega_{13}\omega_9^2\omega_6 - 43\omega_{13}v_1^2\omega_9^3\omega_6^2 + 56\omega_{13}c_s^2\omega_9^2\omega_6^2 + 32\omega_{13}^2c_s^2\omega_9\omega_6 - 48\omega_{13}v_1^2\omega_9^2\omega_6 + 12\omega_{13}\omega_9^3 - 120\omega_{13}^2v_1^2\omega_9\omega_6^2 + 17\omega_{13}\omega_9^3\omega_6^2 - 24\omega_{13}^2\omega_9\omega_6 + 44\omega_{13}c_s^2\omega_9^3\omega_6 - 25\omega_{13}c_s^2\omega_9^3\omega_6^2 + 104\omega_{13}v_1^2\omega_9^2\omega_6^2 + 28\omega_{13}^2v_1^2\omega_9^2 + 48\omega_{13}^2\omega_9\omega_6^2 + 48\omega_{13}^2c_s^2\omega_6^2 - 28\omega_{13}\omega_9^3\omega_6 + 64\omega_{13}^2v_1^2\omega_9\omega_6 - 16\omega_{13}c_s^2\omega_9^2\omega_6 - 72\omega_{13}^2c_s^2\omega_9\omega_6^2 - 40\omega_{13}\omega_9^2\omega_6^2 + 20\omega_{13}^2c_s^2\omega_9^2 + 68\omega_{13}v_1^2\omega_9^3\omega_6 + 80\omega_{13}^2v_1^2\omega_6^2$

$C_{30} = -12v_1^2\omega_9^3\omega_6^3 - 6\omega_{13}^2c_s^2\omega_9^2\omega_6^2 - 108\omega_{13}^2v_1^2c_s^2\omega_9\omega_6^2 + 12\omega_{13}^2v_1^4\omega_9^2\omega_6^2 + 18\omega_{13}^2v_1^2\omega_9^3\omega_6^2 - 36\omega_{13}v_1^2c_s^2\omega_9\omega_6^3 + 13\omega_{13}^2c_s^4\omega_9^3\omega_6^2 + 36\omega_{13}v_1^2\omega_9\omega_6^3 - 12v_1^4\omega_9^2\omega_6^3 - 306\omega_{13}^2v_1^2c_s^2\omega_9\omega_6^3 + 19\omega_{13}^2v_1^4\omega_9^2\omega_6^3 + 6\omega_{13}^2c_s^2\omega_9^3\omega_6 - \omega_{13}^2c_s^2\omega_9^2\omega_6^3 + 12\omega_{13}^2v_1^4\omega_9^3\omega_6 + 12v_1^2\omega_9^3\omega_6^2 - \omega_{13}^2c_s^4\omega_9^3\omega_6^3 - 4\omega_{13}^2v_1^2\omega_9^3\omega_6^3 + 12v_1^4\omega_9^3\omega_6^3 - 12\omega_{13}^2v_1^2\omega_9^2\omega_6^2 + 6\omega_{13}^2c_s^4\omega_9^2\omega_6^2 - 5\omega_{13}^2c_s^2\omega_9^3\omega_6^2 + 12\omega_{13}^2c_s^4\omega_6^3 - 18\omega_{13}^2v_1^4\omega_9^3\omega_6^2 - 36\omega_{13}v_1^4\omega_9\omega_6^3 + 12v_1^2\omega_9^2\omega_6^3 + \omega_{13}^2c_s^4\omega_9^2\omega_6^3 - 12\omega_{13}^2v_1^2\omega_9^3\omega_6 - 19\omega_{13}^2v_1^2\omega_9^2\omega_6^3 - 24\omega_{13}^2c_s^4\omega_9^3\omega_6 - 12v_1^4\omega_9^3\omega_6^2 + 72\omega_{13}^2v_1^4\omega_6^3 + 12\omega_{13}^2c_s^4\omega_9^3 + 4\omega_{13}^2v_1^4\omega_9^3\omega_6^3 + 252\omega_{13}^2v_1^2c_s^2\omega_6^3 + 90\omega_{13}^2v_1^2\omega_9\omega_6^3 + 30\omega_{13}v_1^2c_s^2\omega_9^3\omega_6^2 - 12\omega_{13}^2c_s^4\omega_9\omega_6^3 - 48\omega_{13}v_1^2\omega_9^3\omega_6^2 - 18\omega_{13}c_s^4\omega_9^3\omega_6^2 - 12\omega_{13}c_s^2\omega_9^2\omega_6^2 - 24\omega_{13}v_1^4\omega_9^2\omega_6^2 - 48\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6 + 12\omega_{13}^2v_1^2c_s^2\omega_9^3\omega_6^2 + 6\omega_{13}c_s^4\omega_9^3\omega_6^3 + 27\omega_{13}v_1^2\omega_9^3\omega_6^3 - 48\omega_{13}^2v_1^2c_s^2\omega_9^3 - 12\omega_{13}^2c_s^4\omega_9\omega_6^2 - 21\omega_{13}v_1^2c_s^2\omega_9^3\omega_6^3 - 81\omega_{13}^2v_1^2c_s^2\omega_9^3\omega_6^2 - 12v_1^2c_s^2\omega_9^2\omega_6^3 - 12\omega_{13}c_s^2\omega_9^3\omega_6 + 60\omega_{13}v_1^4\omega_9^2\omega_6^3 - 24\omega_{13}v_1^4\omega_9^3\omega_6 + 6\omega_{13}c_s^2\omega_9^2\omega_6^3 - 12v_1^2c_s^2\omega_9^3\omega_6^2 + 12\omega_{13}^2c_s^2\omega_9\omega_6^3 + 102\omega_{13}^2v_1^2c_s^2\omega_9^3\omega_6 - 90\omega_{13}^2v_1^4\omega_9\omega_6^3 + 60\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6^3 + 18\omega_{13}c_s^2\omega_9^3\omega_6^2 + 48\omega_{13}v_1^4\omega_9^3\omega_6^2 - 72\omega_{13}^2v_1^2\omega_6^3 + 24\omega_{13}v_1^2\omega_9^2\omega_6^2 + 12\omega_{13}c_s^4\omega_9^2\omega_6^2 - 12\omega_{13}v_1^2c_s^2\omega_9^2\omega_6^2 - 27\omega_{13}v_1^4\omega_9^3\omega_6^3 - 6\omega_{13}c_s^2\omega_9^3\omega_6^3 + 162\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6^2 + 12\omega_{13}^2c_s^2\omega_9\omega_6^2 + 12v_1^2c_s^2\omega_9^3\omega_6^3 - 12\omega_{13}v_1^2c_s^2\omega_9^3\omega_6 - 12\omega_{13}^2c_s^2\omega_6^3 + 54\omega_{13}v_1^2c_s^2\omega_9^2\omega_6^3 + 24\omega_{13}v_1^2\omega_9^3\omega_6 - 6\omega_{13}c_s^4\omega_9^2\omega_6^3 + 12\omega_{13}c_s^4\omega_9^3\omega_6 - 60\omega_{13}v_1^2\omega_9^2\omega_6^3$

$C_{31} = -\omega_{13}^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}v_1^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 3\omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - \omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 3\omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6 - \omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 - 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6^2 + \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2v_1^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2 - \omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2v_1^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_6^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2 + 2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 3\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - \omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_6^2 + \omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 -$

$$\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 + \omega_{13}^2v_1^2\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 + 3\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2v_1^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6 - \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6 + \omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2 + 2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 3c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +$$
$$\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_6^2 - \omega_{13}^2v_1^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 +$$
$$2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 +$$
$$2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6 + 6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2 - \omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2$$

$$C_{32} = -\omega_{13}^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12}\omega_6^2 -$$
$$3\omega_{13}^2v_1^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - \omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - \omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$$
$$2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + \omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 3\omega_{13}^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 -$$
$$\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - 3\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 - \omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 +$$
$$\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6^2 + 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 -$$
$$\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 -$$
$$\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$3\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6 + 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6 +$$
$$3v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 -$$
$$3\omega_{13}^2v_1^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2 - 3\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2v_1^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_6^2 -$$
$$\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 +$$
$$\omega_{13}^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 3\omega_{13}v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 +$$
$$\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2 + 6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - \omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 3\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + \omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 -$$
$$\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^3\omega_{12}\omega_6^2 - 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^3\omega_{12}\omega_6^2 + \omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 3\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 -$$
$$9\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 - 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 + 6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 +$$
$$\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_6^2 - 3\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +$$
$$\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 3\omega_{13}v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 +$$
$$3\omega_{13}^2v_1^2\omega_8\omega_5\omega_9^3\omega_{12}\omega_6^2 + \omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2v_1^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$\omega_{13}^2c_s^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 +$$
$$\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6 - 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}\omega_6 +$$
$$\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2 + 6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 3v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 -$$
$$\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_6^2 - 3\omega_{13}^2v_1^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2c_s^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 +$$
$$2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 + \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 +$$
$$6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + \omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2 - 3\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6^2$$

$$C_{33} =$$
$$\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 +$$
$$2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7v_1^2\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_6^2 - 2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 -$$
$$2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6 - 2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 +$$
$$2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_7v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 -$$
$$3\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 6\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^2 + 5\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + \omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2\omega_6^2 + 11\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2\omega_6^2 +$$
$$\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6 +$$
$$2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 +$$
$$2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 5\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 -$$
$$15\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^2 - 6\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^2 - 2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 +$$
$$2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_6^2 + 2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_6^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6 - 8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 + 2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 + 2\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 9\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 -$$
$$13\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 3\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - \omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 -$$
$$11\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7v_1^2\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6 - 3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 +$$
$$2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 3\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 -$$
$$2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2\omega_6^2 - 8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 +$$
$$3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 -$$
$$2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6 + 2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6 +$$
$$2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6 + 3\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 9\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 -$$
$$2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2 - 3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 +$$
$$4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 + \omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2\omega_6 + 15\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6 -$$
$$2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6 + \omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6 + 2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 +$$

$$2\omega_{13}^2\omega_7 v_1^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_{13}\omega_7 v_1^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_7 c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 -$$
$$2\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}\omega_6^2 - 2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_6^2 - 2\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^2 - 2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^2 + 2\omega_{13}^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 +$$
$$8\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 -$$
$$2\omega_{13}^2\omega_7 v_1^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 9\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6 - 3\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2$$

$$C_{34} = \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^3 - 2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 -$$
$$2\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_6^3 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 - 6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_6^3 + 2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2\omega_7 v_1^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 +$$
$$2\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 5\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3 - 15\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 +$$
$$9\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3 + 3\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7 v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$2\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2\omega_6^3 + 3\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 +$$
$$9\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^3 + 2\omega_{13}\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 2\omega_{13}\omega_7 v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 -$$
$$2\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3 - 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7 v_1^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + \omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + 15\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 +$$
$$3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3 + \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7 v_1^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 +$$
$$2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 + \omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 8\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 -$$
$$2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12}\omega_6^3 - 2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3 + 2\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 + 2\omega_{13}^2\omega_7 v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 - 2\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 8\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - \omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 9\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3 - 3\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3 +$$
$$2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3 + 2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 5\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^3 -$$
$$13\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - \omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$4\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3 - 8\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3 + 2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7 v_1^2\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3 + 2\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^3 +$$
$$2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3 + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 + 6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^3 +$$
$$2\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^3 - 2\omega_{13}\omega_7 v_1^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^3 - 2\omega_{13}\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^3 -$$
$$\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3 - 3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3 - 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 -$$
$$2\omega_{13}^2\omega_7 v_1^2\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^3 +$$
$$2\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2\omega_6^3 + 6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2\omega_6^3 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$2\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7 v_1^2\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 -$$
$$2\omega_{13}^2\omega_7 v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_6^3 + 12\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^3 + \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 + 4\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^3 -$$
$$4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^2 + 2\omega_{13}\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7 v_1^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3 + \omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^3 + 11\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^3 + 2\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_6^3 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}\omega_6^3 -$$
$$2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 - 8\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6 - 2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 +$$
$$4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 11\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 - \omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^3 + 2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 -$$
$$2\omega_{13}^2\omega_7 v_1^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3 - 2\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3 - 2\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 + 2\omega_{13}^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2\omega_6^2 - 2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2\omega_6^2 +$$
$$8\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 + 4\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 - 2\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3 -$$
$$6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^3 - 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^3 - 2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2\omega_6^3 +$$
$$2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2\omega_6^2 - 6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_9^3\omega_{12}\omega_6^3 - 2\omega_{13}^2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_9^3\omega_{12}\omega_6^3 + \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}\omega_6^3 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^3$$

$$C_{35} = \omega_5^3\omega_6 + 2\omega_8^2\omega_5^2\omega_6 + \omega_5^2\omega_6^2 - \omega_8^2\omega_5^2 + \omega_8\omega_5\omega_6^2 - \omega_5^3\omega_6^2 - \omega_8^2\omega_5^2\omega_6^2 + \omega_8\omega_5^3 - 2\omega_8\omega_5^3\omega_6 + 3\omega_8^2\omega_5\omega_6^2 - 2\omega_8\omega_5^2\omega_6^2 - \omega_8^2\omega_5\omega_6 + \omega_8\omega_5^3\omega_6^2 - 2\omega_8^2\omega_6^2$$

$$C_{36} = -4\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 5\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 10\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +$$
$$4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6 - 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 - 4\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12}^2\omega_6^2 +$$
$$5\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 + 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 +$$
$$4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_6^2 + 4\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12}^2\omega_6^2 +$$
$$4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_6^2 + 2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +$$
$$4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6 +$$
$$4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6^2 + 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 +$$
$$4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6^2 + 2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_8\omega_5^3\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +$$
$$2\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 + 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^2 -$$
$$2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12}^2\omega_6 - 4\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6 -$$
$$4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 - 8\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2\omega_6$$

$$C_{37} = 2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - 2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 + 3\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2 + \omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 - \omega_8^2\omega_5^3\omega_{15}^2\omega_6^2 + \omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$$
$$\omega_{17}\omega_5^2\omega_{15}^2\omega_6^2 + \omega_{17}\omega_8\omega_5^3\omega_{15}^2 - \omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - \omega_{17}\omega_8^2\omega_5^3\omega_6^2 + \omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6^2 + 2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 +$$
$$\omega_{17}\omega_5^3\omega_{15}^2\omega_6 + 2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 4\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 2\omega_8\omega_5^3\omega_{15}^2\omega_6^2 + 5\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 +$$
$$\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 2\omega_8\omega_5^3\omega_{15}^2\omega_6 - 4\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2 + 2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 4\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 - \omega_{17}\omega_5^3\omega_{15}^2\omega_6^2$$

$$C_{38} = -12v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 24\omega_{13}\omega_7^2 v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 -$$
$$18\omega_{13}\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 36\omega_{13}\omega_7 v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_6^3 -$$
$$12\omega_{13}\omega_7 v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_6^3 + 12v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 - 12\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 +$$
$$12\omega_{13}\omega_7 v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 - 24\omega_{13}\omega_7 v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 30\omega_{13}\omega_7^2 v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 24\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_{15}\omega_9\omega_{12}\omega_6^3 +$$
$$12\omega_{13} v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 18\omega_{13}\omega_7 v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 6\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6 +$$
$$10\omega_{13}\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 + 18v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6 + 12\omega_{13}\omega_7^2 v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 +$$

$12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 - 24\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^3 + 12v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 -$
$48\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 + 6v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3 + 6\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3 -$
$24v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 24\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6 - 12\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$24\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^3 - 6v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 - 12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$12v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6 + 12\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 - 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 - 6\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 -$
$12v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 6\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 - 12v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3 - 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3 -$
$24\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^3 - 6v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 6\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 6v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 +$
$12\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_6^3 - \omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 - 24\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6 + 12v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 +$
$24v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 -$
$18\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2 - 6v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 + 12v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 + 24\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_6^3 +$
$12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_6^3 + 12\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 -$
$12\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 -$
$24v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^2 -$
$12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_{13}v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 -$
$48\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 - 24\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^3 - 36v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 - 12\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 -$
$12\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 12v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 12v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 -$
$12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 - 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 - 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 -$
$12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^3 - 12v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6 - 12v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$24\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_6^3 + 24v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^3 +$
$36\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_6^3 + 12\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 - 18\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^3$

$C_{39} = -4\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 3\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 9\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 -$
$6\omega_{16}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5^2\omega_{15}^2 -$
$4\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 8\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2\omega_6 +$
$2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5\omega_{15}^2\omega_6 -$
$12\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6 + 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_6 +$
$2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_6 +$
$4\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 6\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -$
$8\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 3\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5^2\omega_{15}^2 + 3\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_{15}^2\omega_6 +$
$4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5\omega_{15}^2\omega_6 + 2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5\omega_{15}^2\omega_6 -$
$4\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2 - 6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 + 12\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_6 + 6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 + 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_{15}\omega_6 - 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$4\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}\omega_6 + 4\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 -$
$2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_6 + 4\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 3\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 -$
$12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 - 2\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 +$
$2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_6 -$
$2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15}\omega_6 - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_{15}^2\omega_6 +$
$2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_6 +$
$4\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 24\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 9\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$12\omega_{16}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 24\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 8\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 +$
$4\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 8\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 +$
$4\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2$

$C_{40} = 2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_6^2 - \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6^2 -$
$v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 - 2v_2^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 + 13c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + \omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + \omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 + 2c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - \omega_8^2\omega_5^3\omega_{15}^2\omega_6^2 -$
$2v_2^2\omega_8\omega_5^3\omega_{15}^2\omega_6^2 + 4c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 2v_2^2\omega_8\omega_5^3\omega_{15}^2\omega_6 + \omega_8^2\omega_5^3\omega_{15}^2\omega_6 - v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 -$
$2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 11c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 - v_2^2\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 - \omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - \omega_{17}\omega_8^2\omega_5^3\omega_6^2 - \omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6^2 +$
$2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6^2 - 2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 + v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6^2 - 6c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 -$
$2v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 2v_2^2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 + 6c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2 - c_s^2\omega_8^2\omega_5^3\omega_{15}\omega_6^2 +$
$v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 2c_s^2\omega_8\omega_5^3\omega_{15}^2\omega_6 - 8c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2 - 7c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 - 4\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - 2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$2c_s^2\omega_{17}\omega_5^3\omega_{15}^2\omega_6^2 + 7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + v_2^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6^2 + 2\omega_8\omega_5^3\omega_{15}^2\omega_6^2 - \omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_6^2 -$
$2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 5c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 2c_s^2\omega_{17}\omega_5^3\omega_{15}^2\omega_6 + \omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 2c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 2\omega_8\omega_5^3\omega_{15}^2\omega_6 - v_2^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 +$
$2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + \omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 + c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 2c_s^2\omega_8\omega_5^3\omega_{15}^2\omega_6^2 - 2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 2v_2^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 5c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6^2$

$C_{41} = -12\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 3\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 3\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 -$
$2\omega_{16}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5^2\omega_{15}^2 -$
$4\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 24\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2\omega_6 +$

$$
2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 + 12\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5\omega_{15}^2\omega_6 -
4\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2 - 6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_6 +
2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_6 +
12\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -
24\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 9\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5^2\omega_{15}^2 + 3\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_{15}^2\omega_6 +
4\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5\omega_{15}^2\omega_6 + 6\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5\omega_{15}^2\omega_6 -
4\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -
2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} +
4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_{15}\omega_6 - 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -
12\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}\omega_6 + 12\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 -
6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_6 + 12\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 9\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 -
4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 - 6\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 +
2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}^2\omega_6 + 6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2\omega_{15}^2\omega_6 -
2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15}\omega_6 - 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_{15}^2\omega_6 +
6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_6 +
12\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 8\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 3\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +
4\omega_{16}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 6\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 8\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 8\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 +
4\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 8\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 +
12\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2
$$

$$
C_{42} = -6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 - 6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 42\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 +
12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6^2 - 6\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2 + 4\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 -
6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + 12\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 - 12\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 12\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2 +
6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 24\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 18\omega_{16}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 -
12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6^2 - 6\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5\omega_{15}^2\omega_6^2 +
12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2 + 6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 30\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 -
24\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 18\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 12\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 6\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 -
\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 24\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 9\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +
24\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6 - 36\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2 -
12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 42\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 3\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 +
12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 18\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 18\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + 24\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}^2\omega_6^2 + 6\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 +
36\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2 - 12\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6 + 6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 -
36\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 24\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + \omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 -
12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 36\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_6^2 - 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 6\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 12\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 +
6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 +
12\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6 - 6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 -
6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 54\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 3\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2 + 6\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 +
18\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15}^2\omega_6^2 +
54\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 12\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 3\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 12\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15}\omega_6^2 -
12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 12\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2 -
12\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 12\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}^2\omega_6^2 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5\omega_{15}\omega_6^2 - 9\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2 -
18\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 24\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2 + 12\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 -
54\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6^2 - 9\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 12\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6^2 -
6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15}^2\omega_6^2 +
36\omega_{16}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 12\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 9\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6^2 + 6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 -
54\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 - 6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6^2 + 12\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6^2 + 6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6
$$

$$
C_{43} = -24\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6\omega_{22} - 12\omega_{13}^2v_3^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^3 - 36\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3 - 12\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 36\omega_{13}^2c_s^4\omega_9^3\omega_6^2 -
6\omega_{13}^2v_3^2v_1^2\omega_9^3\omega_6^3 + 12\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^2 + 12\omega_{13}v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 36\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 36\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} +
\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 36\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 36\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2 + 12c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} -
12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^2 - 12\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} + 18\omega_{13}^2c_s^4\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3 - 12\omega_{13}^2v_3^2v_1^2\omega_9^2\omega_6^2\omega_{22} +
2\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 180\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6\omega_{22} - 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 12c_s^4\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 36\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 72\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} +
24\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 12\omega_{13}^2v_3^2v_1^2\omega_9^3\omega_6^2 - 12\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6^2\omega_{22} - 18\omega_{13}^2c_s^4\omega_9^3\omega_6^3 - 6\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^3 +
12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^3 + 72\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 24\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 36\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2 -
54\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 18\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 18\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 24\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 72\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} -
12\omega_{13}^2c_s^2\omega_{18}\omega_6^3\omega_{22} - 36v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_9^3\omega_6^2 - 12\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6\omega_{22} - 18\omega_{13}^2v_3^2c_s^2\omega_9^3\omega_6^3 +
36\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 6\omega_{13}^2v_3^2\omega_9^3\omega_6^3 + 12v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 42\omega_{13}c_s^4\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2\omega_{18}\omega_9^3\omega_6^2 - 12\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} +
6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 150\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 6\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6^3\omega_{22} + 18\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3 +
12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 12\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^2 - 12c_s^4\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 6\omega_{13}^2v_3^2v_1^2\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2\omega_{18}\omega_9^3\omega_6^3 +
18\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 36\omega_{13}^2c_s^4\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2v_3^2\omega_9^3\omega_6^2 - 18\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 36\omega_{13}^2v_3^2c_s^2\omega_9^3\omega_6^2 - 12c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 6\omega_{13}^2c_s^2\omega_9^3\omega_6^3 +
12\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 36\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^3 + 12\omega_{13}c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 84\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6\omega_{22} + 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} +
6\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 18\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 96\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_{22} + 12\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_6^3\omega_{22} + 5\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 12\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^3 -
36\omega_{13}v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}v_3^2v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 12\omega_{13}c_s^4\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22} -
\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 6\omega_{13}^2v_1^2c_s^2\omega_9^3\omega_6^3 - 36\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^2 - 12\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^3 + 12\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^2 - 6\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^3 -
$$

$6\omega_{13}^2c_s^2\omega_9^2\omega_6^3\omega_{22} - 36v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 12v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 18\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 12\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 12\omega_{13}v_1^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$36\omega_{13}^2v_3^2c_s^2\omega_9^2\omega_6^2\omega_{22} - 2\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 108\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 36\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 48\omega_{13}^2c_s^4\omega_{18}\omega_9\omega_6^2\omega_{22} +$
$36\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^2 + 18\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^3 + 12v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2v_1^2c_s^2\omega_9^3\omega_6^2 - 42\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^2\omega_{22} +$
$12\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2 - 6\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3 - 6\omega_{13}^2v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 36\omega_{13}^2c_s^4\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 12\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^2 +$
$12\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 12c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 24\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 24\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 72\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 6\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} -$
$12\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2 + 12\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3 - 88\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 12c_s^4\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 36\omega_{13}c_s^4\omega_{18}\omega_9^2\omega_6^3 - 24\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} +$
$12v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 24\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 6\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^3 + 30\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2\omega_9^2\omega_6^3\omega_{22} -$
$18\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^3 - 12v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 18\omega_{13}^2v_3^2c_s^2\omega_9^2\omega_6^3\omega_{22} - 36\omega_{13}^2c_s^4\omega_{18}\omega_9\omega_6^3\omega_{22} + 18\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} -$
$36\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 12v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_9^2\omega_6^2\omega_{22} + 36v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 6\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^3 + 6\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}$

$C_{44} = -24\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6\omega_{22} - 12\omega_{13}^2v_3^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}c_s^4\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^3 - 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3 - 84\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} -$
$12\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2c_s^4\omega_9^3\omega_6^2 - 18\omega_{13}^2v_3^2v_1^2\omega_9^3\omega_6^3 + 12\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^2 + 12\omega_{13}v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_6^3\omega_{22} -$
$36\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^3 + 36\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2 -$
$12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^2 + 6\omega_{13}^2c_s^4\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3 - 36\omega_{13}^2v_3^2v_1^2\omega_9^2\omega_6^2\omega_{22} + 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} +$
$18\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6\omega_{22} - 6\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3 - 36\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 24\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 72\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 36\omega_{13}^2v_3^2v_1^2\omega_9^3\omega_6^2 -$
$36\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6^2\omega_{22} - 6\omega_{13}^2c_s^4\omega_9^3\omega_6^3 - 6\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^3 - 108\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 60\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} +$
$12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^3 + 24\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 72\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 42\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 12\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2 -$
$18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 54\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 72\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6\omega_{22} - 24\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} -$
$12v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 36v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_9^3\omega_6^2 - 12\omega_{13}c_s^2\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6\omega_{22} - 6\omega_{13}^2v_3^2c_s^2\omega_9^3\omega_6^3 + 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3 +$
$6\omega_{13}^2v_3^2\omega_9^3\omega_6^3 + 12v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}c_s^4\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2\omega_{18}\omega_9^3\omega_6^2 + 18\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^2\omega_{22} +$
$18\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6^3\omega_{22} - 144\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 24v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 6\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3 + 12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 60\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} -$
$12\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6^2 + 18\omega_{13}^2v_3^2v_1^2\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2\omega_{18}\omega_9^3\omega_6^3 + 18\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^4\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2v_3^2\omega_9^3\omega_6^2 - 24\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} +$
$12\omega_{13}^2v_3^2c_s^2\omega_9^3\omega_6^2 + 6\omega_{13}^2c_s^2\omega_9^3\omega_6^3 + 12\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^3 + 24v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6\omega_{22} + 6\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} +$
$18\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 132\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_{22} - \omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 36\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^3 - 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$36\omega_{13}v_3^2v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 36\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22} - 18\omega_{13}^2v_1^2c_s^2\omega_9^3\omega_6^3 - 12\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^2 - 36\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^3 +$
$36\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^2 - 18\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^3 - 6\omega_{13}^2c_s^2\omega_9^2\omega_6^3\omega_{22} - 12v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 36v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 24\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} +$
$84\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_6\omega_{22} + 72\omega_{13}v_1^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2v_3^2c_s^2\omega_9^2\omega_6^2\omega_{22} - 18\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 36\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} +$
$108\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^4\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^2 + 6\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^3 + 12v_3^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_9^2\omega_6^2\omega_{22} +$
$36\omega_{13}^2v_1^2c_s^2\omega_9^3\omega_6^2 - 24\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 36\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2 - 18\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} -$
$48\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_{22} - 36\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^2 + 36\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^3 - 72\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 24\omega_{13}v_3^2\omega_{18}\omega_9^3\omega_6\omega_{22} - 24\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} +$
$78\omega_{13}v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 36\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^2 + 36\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3 - 4\omega_{13}^2c_s^4\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 12\omega_{13}c_s^4\omega_{18}\omega_9^2\omega_6^3 - 24\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} -$
$24v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 6\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 24\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 18\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^3 + 12\omega_{13}c_s^4\omega_{18}\omega_9^3\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2\omega_9^2\omega_6^3\omega_{22} -$
$6\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^3 - 12v_3^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 6\omega_{13}^2v_3^2c_s^2\omega_9^2\omega_6^3\omega_{22} + 6\omega_{13}^2c_s^4\omega_{18}\omega_9\omega_6^3\omega_{22} + 180\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 36\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} -$
$12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 36v_3^2v_1^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_9^2\omega_6^2\omega_{22} + 36v_3^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 18\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^3\omega_6^3 - 12\omega_{13}c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22}$

$C_{45} = 2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2 - \omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} - 8\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} - 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 +$
$6\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22} - 7\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 2\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3 - 2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3 + 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 + 3\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} -$
$4\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} - 5\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 2\omega_{13}^2c_s^2\omega_{11}\omega_9^3\omega_6^3\omega_{22} - 15\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 4\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2 + 4\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2 +$
$13\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 7\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 8c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 4v_1^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22} -$
$6\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22} + 4\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2 + 8\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} + 2\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} +$
$2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3 - \omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 2\omega_{13}^2c_s^2\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} - 4\omega_{13}^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 4\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} +$
$2\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 4\omega_{13}^2c_s^2\omega_{11}\omega_9^3\omega_6^2\omega_{22} + 2\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 2\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 2\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} +$
$12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3\omega_6\omega_{22} + 4\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} - 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22} - 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3 - \omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 3\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} -$
$5\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} - 2\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 - 2\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3 - 2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 24\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2\omega_{22} +$
$4v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} + 8c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} + \omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} - 2\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 4\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2 + 4\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2 +$
$4\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 4\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - \omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 3\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 3\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} +$
$5\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 4\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 - 4\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 - 4\omega_{13}^2c_s^2\omega_{18}^2\omega_9^3\omega_6\omega_{22} - 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} + 4\omega_{13}^2c_s^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} +$
$\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 8\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3\omega_{22} + 2\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 + 2\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3 - 4v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} + 4\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$
$8c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} + 9\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} + 11\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} + 2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^3 - 16\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_{22} - 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} +$
$4\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3 + 4\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3 - 4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3\omega_6^2 - 9\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2\omega_{22} + 2\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22} + 26\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6\omega_{22} -$
$4\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 8\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 3\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + \omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} - 4\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2 - 4\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9^3\omega_6^2$

$C_{46} = 2v_2^2v_3^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + v_2\omega_{13}v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}v_3^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 2v_2^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 - v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$v_2^2\omega_{13}v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 2v_2^2v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$4v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 + v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$\omega_{13}v_3^2v_1c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2v_3^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} +$
$v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22} + 2v_2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$

$$2\omega_{13}v_3^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22} -$$
$$\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} - v_2^2\omega_{13}v_3^2v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$$
$$2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$$
$$2v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} +$$
$$2v_2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 2v_3^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 4v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$$
$$2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$$
$$4v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} - v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} -$$
$$2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2^2\omega_{13}v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$$
$$2v_2\omega_{13}v_3^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} +$$
$$2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 + 2v_2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 -$$
$$2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22} +$$
$$2v_2v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 + v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22} +$$
$$2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 - 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$$
$$2v_2^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_3^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} -$$
$$2v_2^2v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 4v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} +$$
$$v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + \omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22} -$$
$$2v_2\omega_{13}v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2^2v_3^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 2v_2^2v_3^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$$
$$2v_2^2\omega_{13}v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} +$$
$$v_2^2\omega_{13}v_1c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$$
$$v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + v_2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$$
$$2v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 + 2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} +$$
$$v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3 - 2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}v_1^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$$
$$2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22} + v_2\omega_{13}v_3^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$$
$$\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 2v_2v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$$
$$2v_3^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 - \omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$$
$$2v_2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 2v_2^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} -$$
$$v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 8v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 +$$
$$2v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} +$$
$$2v_2v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_3^2v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$$
$$v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$$
$$2v_2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2^2v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 -$$
$$2v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - \omega_{13}v_3^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$$
$$\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 + 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$$
$$2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 -$$
$$2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_3^2v_1\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$$
$$2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - \omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} -$$
$$2v_2^2v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 + v_2^2\omega_{13}v_3^2v_1\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$$
$$2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} +$$
$$v_2^2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$$
$$2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22} - 2v_2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 - 2v_2\omega_{13}v_1^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$$
$$2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 2v_2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$$
$$v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 + 2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 - v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$$
$$2\omega_{13}v_3^2v_1c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2^2v_3^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} +$$

$2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 -$
$2v_2^2\omega_{13}v_3^2v_1\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} - v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 +$
$2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 8v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 8v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2v_2^2\omega_{13}v_3^2v_1\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 + 2v_2^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + \omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 -$
$2v_2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 + \omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 + 2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3 +$
$2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 - 8v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_{22} - v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3 -$
$2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22} - 2\omega_{13}v_3^2v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$2v_2^2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}v_3^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}v_3^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$12v_2\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} - 2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2\omega_{13}v_3^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$2v_2^2v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}v_3^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}v_3^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$2v_2^2\omega_{13}v_3^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 + 2v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22} - 2v_2\omega_{13}v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$2v_2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 - 2\omega_{13}v_3^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} - v_2\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3$

$C_{47} = -2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 4v_2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$4v_2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 8v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_{22} -$
$14v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 12v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 -$
$2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$2v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{22} -$
$\omega_{13}^2v_3^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 +$
$2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - v_2^2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 +$
$4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 2v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 + 2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 +$
$v_2^2\omega_{13}^2v_3^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6\omega_{22} - 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} -$
$8v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 + 4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 - 4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 2v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 +$
$v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 - 2v_2^2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - \omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} -$
$\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}^2v_3^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 + 2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$4v_2\omega_{13}^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - v_2^2\omega_{13}^2v_3^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} -$
$2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 - \omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 4v_2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6\omega_{22} + 4v_2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 - v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} +$
$8v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 8v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 +$
$2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} +$
$2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} +$
$v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 + 9v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 -$
$4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 -$
$2v_2\omega_{13}^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2^2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + \omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 -$
$2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + \omega_{13}^2v_3^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2v_2^2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + v_2^2\omega_{13}^2v_3^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} -$
$2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 - 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 +$
$4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 + 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} + \omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 2v_2^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 -$
$4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + v_2^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2v_2^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - v_2^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 -$
$4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + v_2^2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 4v_2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 -$

$2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 4v_2\omega_{13}\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 + 2v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}^2 v_1 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$2\omega_{13}v_3^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$4v_2\omega_{13}v_3^2\omega_7 v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 4v_2\omega_{13}v_3^2\omega_7 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 -$
$4v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 4v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + \omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$4v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 - 2v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 8v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} -$
$v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 2v_2^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 +$
$2v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}v_3^2\omega_7 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 +$
$2v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 - 4v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} -$
$2v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 2v_2^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 4v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^2\omega_{22} -$
$4v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}v_3^2\omega_7 v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 -$
$2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}v_3^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$2\omega_{13}v_3^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 - \omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 4v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 12v_2\omega_{13}\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2\omega_{13}^2 v_1 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 4v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} -$
$4v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 + 2v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22} - 2v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} -$
$2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 2v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 4v_2\omega_{13}v_3^2\omega_7 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 2v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 2v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22} -$
$v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 4v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} -$
$4v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 6v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6\omega_{22} - 2v_2\omega_{13}^2 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6\omega_{22} -$
$2v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} + v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 2\omega_{13}v_3^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2 -$
$2v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} - v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 - 2v_2^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$4v_2\omega_{13}\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6\omega_{22} - 2v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}^2 v_1 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 + 2v_2\omega_{13}^2\omega_7 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + 4v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$4v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + \omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^3 - 2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} +$
$2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} + v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2\omega_{13}v_3^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 - 2v_2^2\omega_{13}^2 v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3\omega_{22} +$
$2v_2\omega_{13}^2 v_3^2\omega_7 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}\omega_6^3 - 2\omega_{13}^2 v_3^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_6^3\omega_{22}$

$C_{48} = -12\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} + 12\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$12\omega_{13}\omega_7^2 c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2 c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} - 12\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7^2 c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 18\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} +$
$12v_3^2\omega_7^2 v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} -$
$24v_2\omega_7^2 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3 + 24v_2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} +$
$12v_3^2\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - \omega_{13}\omega_7^2 c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 24\omega_{13}\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} -$
$24v_2\omega_{13}v_3^2\omega_7^2 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12v_3^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3 - 12v_2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$12v_3^2\omega_7^2 v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3 - 24v_2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12v_2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 6\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22} + 24v_2\omega_7^2 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$24\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} - 24v_2 v_3^2\omega_7^2 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} - 24v_2 v_3^2\omega_7^2 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3 + 24v_2\omega_{13}v_3^2\omega_7^2 v_1\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$12\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2 v_1^2 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}\omega_7^2 c_s^4\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 - 24v_2 v_3^2\omega_7^2 v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 6\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12v_2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 24\omega_{13}\omega_7 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$24v_2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_7 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} +$
$24v_2\omega_{13}v_3^2\omega_7^2 v_1\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 18\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}\omega_7^2 c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$6\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 18\omega_{13}\omega_7 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 + 24\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12v_3^2\omega_7^2 v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$24v_2\omega_{13}v_3^2\omega_7^2 v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 60\omega_{13}\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 24v_2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$24v_2\omega_7^2 v_1 c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7^2 c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 24v_2\omega_{13}v_3^2\omega_7^2 v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 24\omega_{13}\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} + 12v_3^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} - 12v_2\omega_{13}v_3^2\omega_7^2 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7^2 c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7^2 v_1^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$6\omega_{13}\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22} - 24v_2\omega_{13}v_3^2\omega_7^2 v_1\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_7^2 c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12v_2\omega_{13}v_3^2\omega_7^2 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}\omega_7^2 v_1^2 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 24v_2 v_3^2\omega_7^2 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$12v_2\omega_{13}v_3^2\omega_7^2 v_1\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} + 12v_3^2\omega_7^2 v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 -$
$12\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}v_3^2\omega_7^2 v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 24v_2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$24v_2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} - 24v_2\omega_{13}v_3^2\omega_7^2 v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 + 24v_2 v_3^2\omega_7^2 v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$

$12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$12v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 + 24\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_{12}\omega_6^2\omega_{22} + 12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3 + 12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3 - 12\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} -$
$24v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} +$
$24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} + 24v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12v_3^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 24\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 24v_2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 +$
$12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3 + 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$12\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$12\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} + 6\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3 -$
$12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3 - 12v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$12v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 - 48\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 + 24v_2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} +$
$36\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 24v_2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3 - 24v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 42\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 36\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 + 12\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 - 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$24\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} - 12\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$12\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 36\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^2\omega_{22} -$
$24\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 + 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} +$
$12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} - 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} + 24\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$6\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3 - 6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$10\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} -$
$6\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3 - 24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^3 + 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} -$
$12v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 24\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_{22} + 24\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 - 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 + 12\omega_{13}v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 24v_2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 60\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$6\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3 + 12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} + 12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3 - 18\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$24v_2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 18\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 + 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$24v_2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 24\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} - 12\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 24v_2v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{22} - 6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} -$
$24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3 +$

$12v_3^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 -$
$12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_6^3\omega_{22} +$
$24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}\omega_6^2 - 24\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_6^3\omega_{22}$

$C_{49} = -2v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 - 2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2 +$
$2v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22} + v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2 -$
$\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3 - 2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22} +$
$5v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{13}v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$4v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_{22} + 2v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$2v_2\omega_{13}v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - v_2\omega_{13}v_1^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 4v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} -$
$6v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$2v_2^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} - 2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_1\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3 + 2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2 -$
$2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3 + v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 -$
$2v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + \omega_{13}v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 2\omega_{13}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$2\omega_{13}v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22} +$
$v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} +$
$2v_2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} + \omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} -$
$v_2\omega_{13}v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_1\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$2v_2^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} + 2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}v_1c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$\omega_{13}v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} - v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} -$
$v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} + 2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + \omega_{13}v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3 - v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3 - 2\omega_{13}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 3v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6\omega_{22} + 2v_2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} +$
$v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_1\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} +$
$2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$2v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2\omega_{13}v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} + 2v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$2v_2\omega_{13}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} - 2v_2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} + 2v_2\omega_{13}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} + v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} +$
$3v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} +$
$2v_2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2v_2\omega_{13}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_1\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} -$
$2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 + 2v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 + 2v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 - \omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} +$
$2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + \omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3 + 2v_2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} +$
$2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2 - v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3 - 2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2 - v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 -$
$2v_2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3 - 2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3 - 2v_2\omega_{13}v_1^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3 +$
$2v_2^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$2v_2\omega_{13}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} - 2v_2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} + 2v_2\omega_{13}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3\omega_{22} + v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} +$
$3v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} +$
$2v_2\omega_{13}v_1^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22} + v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2v_2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_2\omega_{13}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + v_2^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} +$
$2v_2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} - \omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3\omega_{22} - 2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2 + v_2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2 -$
$6v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} + \omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$2v_2^2\omega_{13}v_1\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3 + v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12}\omega_6^3 -$
$v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 2v_2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_1\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - v_2^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$v_2^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + \omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$2v_2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} + 2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3 - 2v_2\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} +$
$2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3 - 2\omega_{13}v_1c_s^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 2\omega_{13}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}\omega_6^3\omega_{22}$

$C_{50} = 6v_3^2\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 3v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 3v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 12v_2^2v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$12v_2^2v_3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 48\omega_7v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$
$6v_3^2\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 6v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 6v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$
$12v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 - 12v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 - 12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 6v_2^2\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$

$$12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 6v_2^2v_3^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 6v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 6v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 -$$

$$12v_2^2\omega_7^2v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 + 12v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 24v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 +$$

$$6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 - 24\omega_7^2v_1c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 12v_2^2v_3^2\omega_7^2v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$$

$$6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 - 12v_3^2\omega_7^2v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 24\omega_7v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_{15}\omega_6^2 - 24\omega_7v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$$

$$6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 - 3v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 +$$

$$12v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 6v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 6v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 12v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 +$$

$$6v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_3^2\omega_7^2v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 +$$

$$12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 12v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 - 3v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 -$$

$$12v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 - 3v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 6v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 3v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 +$$

$$12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 12v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 12v_2^2\omega_7^2v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 - 12v_2^2v_3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 +$$

$$6v_3\omega_7^2v_1^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 12v_2^2v_3\omega_7^2v_1^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 24\omega_7^2v_1c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_2^2v_3^2\omega_7^2v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 +$$

$$6v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 3v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 24v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 -$$

$$12v_2^2\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 6v_2^2v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 6v_2^2v_3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 12v_3\omega_7^2v_1^2c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 -$$

$$12v_2^2v_3^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 48\omega_7^2v_1c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 - 12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 -$$

$$12v_3^2\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 + 6v_2^2v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 6v_2^2v_3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 -$$

$$12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 3v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 6v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 12v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 +$$

$$12v_3^2\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 6v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 3v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 +$$

$$12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 6v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 6v_2^2v_3^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 3v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$$

$$6v_2^2\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 3v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 24\omega_7^2v_1c_s^4\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6^2 -$$

$$6v_2^2v_3^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 24\omega_7^2v_1c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 48\omega_7^2v_1c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 - 6v_2^2\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 +$$

$$12v_2^2v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_2^2v_3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 12v_3\omega_7^2v_1^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 -$$

$$12v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 12v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 6v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 -$$

$$12v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 - 6v_3^2\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 28\omega_7v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 -$$

$$12v_3\omega_7^2v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 12v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 - 12v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 12v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 +$$

$$12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 3v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_3^2\omega_7^2v_1c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 +$$

$$12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 3v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 24v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 -$$

$$12v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 24\omega_7^2v_1c_s^4\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2 + 12v_2^2v_3^2\omega_7^2v_1\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 3v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$$

$$12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_2^2\omega_7^2v_1c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 - 6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 12v_2^2v_3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 +$$

$$12v_3\omega_7^2v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 12v_2^2v_3\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 6v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 +$$

$$6v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 12v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 - 12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$$

$$6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 2\omega_7^2v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 6v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 + 6v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 -$$

$$6v_3\omega_7^2v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 12v_2^2v_3\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 12v_2^2v_3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 -$$

$$12v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$$

$$6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 3v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 +$$

$$3v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 3v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 +$$

$$6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 48\omega_7v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 6v_3\omega_7^2v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12v_2^2\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$$

$$6v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 - 6v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 12v_2^2v_3^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 +$$

$$24\omega_7^2v_1c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 3v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 +$$

$$6v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 - 6v_2^2v_3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 12v_3\omega_7^2v_1^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 6v_2^2v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 +$$

$$12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2$$

$$C_{51} = -8v_2^2v_3v_1\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 4v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^3 - 8v_3v_1c_s^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 4v_2^2v_3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 +$$

$$2c_s^4\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 4v_3v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 + 8v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 6v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6 - 16v_2^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 -$$

$$4v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_{15}\omega_6^3 - 2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 + 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 - 4v_3v_1c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 +$$

$$4v_2^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 4v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 4v_2^2v_3v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4v_2^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6 -$$

$$2v_2^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 2v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 4v_3^2c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 4c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6 -$$

$$4v_2^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 8v_2^2v_3v_1\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 8v_3v_1c_s^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 8v_3v_1c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 +$$

$$6v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^3 + 4v_2^2v_3v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 + 8v_2^2v_3v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 12c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$$

$$4c_s^4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 2v_3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 + 4v_2^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 8v_2^2v_3v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 2v_2^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 +$$

$$4v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 8v_3v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 4c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 4v_2^2v_3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 -$$

$$4c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 4v_3^2c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 4v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 -$$

$$12v_2^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 + 4c_s^4\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 8v_2^2v_3v_1\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 -$$

$$2v_2^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 + 4v_2^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 4v_3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 2c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4v_3^2c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15}\omega_6^2 +$$

$$2v_2^2v_3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^2 - 2v_2^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 2v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$$

$$4v_3v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 4v_2^2v_3v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 + 8v_2^2v_3v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 2v_3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 - 4v_2^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 +$$

$$8v_2^2v_3v_1\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 4c_s^4\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 4v_2^2v_3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 8v_2^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 -$$

$$4v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 4c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 2c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 - 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^3 +$$

$$8v_3v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 2v_2^2v_3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 + 2v_3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4v_2^2v_3v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 +$$

$$8v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 4v_2^2v_3^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 8v_2^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^3 + 4v_3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 -$$

$$4v_2^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 4c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 4v_2^2c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 -$$

$$8v_3v_1c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + v_2^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 - 2v_2^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 8v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 +$$

$$4v_3^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 4v_2^2v_3^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 12v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 8v_3v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 +$$

$$4v_2^2c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 4c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 4v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 4v_2^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 4v_2^2v_3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 -$$

$$4v_3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 4v_2^2v_3^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 8v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6 - 2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$$

$4v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 4c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 4c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 8v_2^2v_3v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 4v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 +$
$2v_2^2v_3^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 8v_3v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 8v_3v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 2v_2^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 -$
$2v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 8v_3v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^3 + 4v_3v_1c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 +$
$4v_3v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 4v_2^2v_3v_1\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 - v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 8v_2^2v_3v_1\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 8v_2^2v_3v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$4v_2^2v_3^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 4v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 2v_2^2v_3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 - 4v_2^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 -$
$4v_2^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 2v_2^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 - 4c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - v_2^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 4v_2^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 +$
$4v_3^2c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 2v_2^2v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^3 + 8v_2^2v_3v_1\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 16v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 +$
$v_2^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 + 8v_3v_1c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 8v_3v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 + 4c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 4v_2^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 +$
$4v_2^2c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^3 + 4v_2^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4v_2^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 +$
$4v_2^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 8v_2^2v_3v_1\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 4v_3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 4v_3v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 - 2v_2^2v_3^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^3 +$
$4v_2^2v_3^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^3 - 4v_2^2v_3v_1\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 + 8v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 -$
$8v_2^2v_3v_1\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 2v_2^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_6^2 - 8v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 8v_3v_1c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^2 -$
$2v_2^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 2v_2^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 2v_2^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}\omega_6^2 - 4v_3^2c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15}\omega_6^3 + 4c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^3$

$C_{52} = -4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + \omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$2\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 - \omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + \omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 +$
$4\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 -$
$\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 +$
$4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 6\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 +$
$4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 +$
$4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 +$
$4\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 4\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 -$
$2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + \omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 3\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 +$
$\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$
$2\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$
$4\omega_{16}\omega_{10}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2 -$
$8\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 -$
$2\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 4\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 +$
$2\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 + 2\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 +$
$4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 +$
$4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 2\omega_{16}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$
$2\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 -$
$4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 +$
$4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6 + 2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 +$
$4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 + 4\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$
$2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2 + 2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 +$
$2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 3\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - \omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - \omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 -$
$2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 -$
$2\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6 -$
$10\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 -$
$2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 +$
$2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + \omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 +$
$\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 -$
$4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 2\omega_{10}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 -$
$4\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 - 4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 +$
$6\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 +$
$4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 - \omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 -$
$4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 - \omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 4\omega_{16}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 +$
$2\omega_{16}\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 + 4\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}\omega_7^2v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 -$
$4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}v_3\omega_7^2v_1^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 -$
$4\omega_{16}\omega_{10}v_3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 - 4\omega_{10}\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}v_3^2\omega_7^2v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6$

$C_{53} = -2\omega_7^2v_1^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 12v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 6v_3\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$2v_2^2\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 2v_2^2\omega_7^2v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 8v_3\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} +$
$2v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 4v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 4v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} +$
$8v_2^2v_3\omega_7^2v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 8v_3\omega_7v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 8v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$4v_2^2\omega_7^2v_1^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 8v_2^2v_3\omega_7^2v_1\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 4v_2^2\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$8v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 2v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$4v_2^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 4v_2^2\omega_7^2v_1^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$2v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 4v_2^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 4v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$

$\omega_7^2 v_1^2 c_s^2 \omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 4v_2^2\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 8v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 16v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 2\omega_7^2 v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$2v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 2\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 8v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$2v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 4\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 8v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$2v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 4v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 2v_2^2\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$2v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 2v_2^2\omega_7^2 v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 -$
$4\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 4v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$4v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 2v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} -$
$4\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 4v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} -$
$8v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_{19} + 2v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} -$
$4\omega_7^2 v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 8v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_7^2 v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$8v_3 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 4v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$4v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 4\omega_7^2 v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 2v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$8v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 8v_3 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$2v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 2v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 8v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$8v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 2v_2^2\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 4\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$8v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 2v_2^2\omega_7^2 v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 8v_2^2 v_3\omega_7^2 v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} +$
$4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 4v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 4v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$4\omega_7^2 v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 4\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 4v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$4v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 8v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$2v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 4v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 4v_2^2 v_3\omega_7^2 v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$4v_2^2\omega_7^2 v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 4v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 8v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} +$
$4v_2^2\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 8v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 8v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 -$
$2v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 4v_2^2 v_3\omega_7^2 v_1\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 4v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} +$
$4\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 2v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 4v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$2v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - \omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 4v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$2v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 2v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 4\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$2\omega_7^2 v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 8v_3 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 4v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$8v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 4v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$8v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 8v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 2\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$8v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 4v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 2\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 2\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 8v_2^2 v_3\omega_7^2 v_1\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 4v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 4v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6\omega_{19} - 2\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$8v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_{19} + v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 6v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 +$
$4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_{19} + v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 4v_2^2\omega_7^2 v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_7^2 v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 12v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 4v_2^2\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$20v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} + 4\omega_7^2 v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 2v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$4v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 4v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$2v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 4v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 4v_2^2 v_3\omega_7^2 v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} +$
$4v_3\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} + 4v_2^2 v_3\omega_7^2 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 4v_2^2\omega_7^2 v_1^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} -$
$4v_2^2\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19} - 8v_2^2 v_3\omega_7^2 v_1\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\omega_{19} - 4v_2^2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{19} +$
$8v_3\omega_7 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 4v_2^2\omega_7^2 v_1^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6\omega_{19}$

$C_{54} = -36c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 48\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 45\omega_{13}v_1^2 c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 36c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 -$
$6\omega_{13}v_3^2 v_1^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 12v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 12c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 72\omega_{13}v_1^2 c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 12v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 48\omega_{13}v_3^2 v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} +$
$18\omega_{13}v_3^2 c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}v_1^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 42\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 12\omega_{13}v_3^2 v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 36c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 -$
$18\omega_{13}v_1^2 c_s^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 12\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 12v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 12c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 18\omega_{13}v_1^2 c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$15\omega_{13}v_3^2 v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 3\omega_{13}v_3^2 c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 12v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}v_1^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$
$24\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} + 12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 18\omega_{13}v_1^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 12\omega_{13}v_3^2 v_1^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} +$
$3\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 15\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 - 12\omega_{13}v_3^2 c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 6\omega_{13}v_3^2 c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 +$
$24\omega_{13}v_3^2 v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 6\omega_{13}v_3^2 v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 144\omega_{13}v_1^2 c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 36c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 6\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 +$
$156\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 12v_3^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 6\omega_{13}v_3^2 v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 36\omega_{13}v_1^2 c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 6\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 -$
$6\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}v_3^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} - 36\omega_{13}v_1^2 c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 36\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 36\omega_{13}v_1^2 c_s^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$
$36\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 18\omega_{13}v_1^2 c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 6\omega_{13}v_3^2 v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 -$
$12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 12\omega_{13}v_3^2 c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 12\omega_{13}v_3^2 v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 15\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 36c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$
$12\omega_{13}v_3^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 54\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 36\omega_{13}v_1^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 6\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 -$
$6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 12\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 12v_3^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 12v_3^2 v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 24\omega_{13}v_3^2 v_1^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} +$
$18\omega_{13}v_1^2 c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} + 6\omega_{13}v_3^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 6\omega_{13}v_3^2 v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 12c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 12\omega_{13}v_3^2 v_1^2\omega_{11}^2\omega_{18}\omega_9^3\omega_{22} - 24\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} +$
$36v_1^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 36\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 18\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 6\omega_{13}c_s^4\omega_{11}^2\omega_9\omega_6^3\omega_{22} + 27\omega_{13}v_1^2 c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$
$36\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 12v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 12v_3^2 c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 12c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 12v_3^2 v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} +$
$18\omega_{13}v_3^2 c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 36\omega_{13}v_3^2 v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 72\omega_{13}v_1^2 c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} - 36v_1^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 72\omega_{13}v_1^2 c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} -$
$6\omega_{13}v_1^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}v_3^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 6\omega_{13}c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}v_3^2 v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 12v_3^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 12v_3^2 v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 +$
$36v_1^2 c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 18\omega_{13}v_1^2 c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 36\omega_{13}v_1^2 c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 96\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_{22} + 12\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 +$

$6\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 6\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} - 60\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 24\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} +$
$12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} - 12v_3^2v_1^2\omega_{11}\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 12v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 36\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_9\omega_6^2\omega_{22} - 6\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} +$
$6\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - \omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 24\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} + 36v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 6\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 6\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} +$
$18\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 15\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 36c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + \omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 12v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 -$
$6\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 36v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 12\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_9\omega_6^2\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_9\omega_6^2\omega_{22} + 3\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$
$72\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} - 36v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 18\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 5\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 9\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} +$
$12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^2\omega_9\omega_6^2\omega_{22} + 24\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} + 12\omega_{13}v_1^2\omega_{11}^2\omega_9\omega_6^2\omega_{22} + 12v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$
$12v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 12v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 12c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 9\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 5\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} +$
$12\omega_{13}c_s^4\omega_{11}^2\omega_9\omega_6^2\omega_{22} - 108\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 24\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22}$

$C_{55} = 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 60\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 24c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 90\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} +$
$12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 + 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}^2c_s^2\omega_{11}^2\omega_9^2\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 18\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 96\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_{22} +$
$66\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 24\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 - 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} +$
$12\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} + 24\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 48\omega_{13}^2c_s^2\omega_{11}^2\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3 -$
$\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 24c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} - 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 84\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} +$
$24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 + 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 132\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 24\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2 -$
$12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} + 36\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6\omega_{22} - 18\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 156\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22} - 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 + 6\omega_{13}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} +$
$12\omega_{13}^2v_3^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 4\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 18\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9^3 + 24\omega_{13}^2\omega_{11}^2\omega_9^2\omega_6^2\omega_{22} -$
$66\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}^2\omega_9^3\omega_6^3\omega_{22} + 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 48\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 66\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} +$
$12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 42\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 24\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 - 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} - 18\omega_{13}^2c_s^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} +$
$72\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 72\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 12\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22} -$
$24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 24c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 84\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 - 36\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6\omega_{22} -$
$24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 + 3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^3\omega_6^3\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 + 18\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 24\omega_{13}^2v_3^2\omega_{11}^2\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} +$
$4\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3 - 12\omega_{13}^2\omega_{11}^2\omega_9^2\omega_6^3\omega_{22} + 24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 - 6\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$
$24\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 24\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3 + \omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} - 36\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 36\omega_{13}^2c_s^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22} -$
$12\omega_{13}v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2 - 12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 24\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2 + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}$

$C_{56} = -12c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 48\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 15\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 -$
$18\omega_{13}v_3^2v_1^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 12v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 12c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 24\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 12v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 +$
$144\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 102\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}v_1^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 36\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} +$
$12c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 6\omega_{13}v_1^2c_s^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 12\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 12v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 12c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 6\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} -$
$45\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 30\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 12c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 12v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}v_1^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$
$24\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} + 12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 6\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 36\omega_{13}v_3^2v_1^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$
$6\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 15\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 - 36\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 +$
$72\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 18\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 48\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 12c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 6\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 +$
$18\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 36v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 18\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 12\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 6\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 -$
$6\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 60\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} - 12\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 12\omega_{13}v_1^2c_s^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$
$12\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} - 6\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 18\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 +$
$36\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 36\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 + 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 15\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} +$
$6\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 18\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 12\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2 - 6\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + \omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$
$12\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 36v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 36v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 72\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} + 6\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} +$
$18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 18\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 12c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 36\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 24\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} + 12v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 -$
$48\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_{22} + 36\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 18\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 9\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 +$
$12v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 36v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 12c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 36v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 54\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$
$108\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 24\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} - 12v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 24\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} - 6\omega_{13}v_1^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} -$
$36\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 36\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 36v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 36v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 12v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 24\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} +$
$6\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 12\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_{22} + 12\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} +$
$12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2 + 18\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} - 5\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 72\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_6^2\omega_{22} + 12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} -$
$36v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 36v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_9\omega_6^2\omega_{22} - 6\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 6\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} +$
$24\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} + 12v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 18\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 6\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} -$
$5\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 12c_s^4\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 36v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 12v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} -$
$36\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_9\omega_6^2\omega_{22} + 24\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_9\omega_6^2\omega_{22} - \omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 24\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} - 12v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} -$
$6\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 15\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 27\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} + 24\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} +$
$12\omega_{13}v_1^2\omega_{11}^2\omega_9\omega_6^2\omega_{22} + 36v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 12v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 36v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 12c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} -$
$9\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 5\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 36\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 72\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22} + 60\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6\omega_{22}$

$C_{57} = -12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 - 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 6\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 4v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$
$4v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 4v_3^2\omega_7\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} + 4v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 6\omega_7c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} -$
$12c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 - 4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 4v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 - 12\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 8v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} +$
$8\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 9\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} -$
$2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 - 9\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} +$
$12c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 4v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} + 6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} +$

$4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 - 4v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 - 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} +$
$2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} - 4v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} + 24\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 12\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} -$
$2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} + 2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} - 2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 12c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 +$
$12\omega_7c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 + 2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 12c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} + 4v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} +$
$4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 4v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 6\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 - 2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 -$
$6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} + 8v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 8\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} +$
$6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} + 12c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 4v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} -$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} + 2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} + 4v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$4v_3^2\omega_7\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 -$
$4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} + 4v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} - 3v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 3\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} -$
$4v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} - 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} - 3\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 3v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 + 4v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 + 6\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} - 24\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} -$
$4v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 -$
$2v_3^2\omega_7\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$
$4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 - 4v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 - 4v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 2v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}$

$C_{58} = 2c_s^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2 + \omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 2c_s^2\omega_{20}\omega_5^2\omega_{18}^2\omega_6^3 - 2v_3^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + \omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - \omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^3 +$
$13c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - 7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^3 - 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2 + 2c_s^2\omega_{20}\omega_5^2\omega_{18}^2\omega_6^2 + v_3^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3 - 4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + \omega_8^2\omega_5\omega_{18}^2\omega_6^3 -$
$2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 2c_s^2\omega_8\omega_5^2\omega_{18}^2\omega_6^3 + 4c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2 + v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^3 - v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^3 -$
$2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 - c_s^2\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 2\omega_8\omega_5^2\omega_{18}^2\omega_6^2 + 2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6 + \omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^2 - \omega_{20}\omega_8^2\omega_5^2\omega_6^3 + 2c_s^2\omega_{20}\omega_8\omega_{18}^2\omega_6^3 + c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^3 -$
$5c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 - 2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 + 2\omega_{20}\omega_8^2\omega_5^2\omega_6^2 + 2v_3^2\omega_8\omega_5\omega_{18}^2\omega_6^3 - \omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^3 - c_s^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3 + 2\omega_8\omega_5^2\omega_{18}^2\omega_6^3 +$
$2c_s^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 4c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 6c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6 + v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 2v_3^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2 - 2c_s^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 +$
$v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_6^3 + 4v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 7c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2 - \omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - 2\omega_8\omega_5\omega_{18}^2\omega_6^3 +$
$c_s^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3 + \omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^3 - 2v_3^2\omega_8\omega_5^2\omega_{18}^2\omega_6^3 - 2c_s^2\omega_{20}\omega_8^2\omega_{18}^2\omega_6^2 + \omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 - v_3^2\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 2c_s^2\omega_{20}\omega_5\omega_{18}^2\omega_6^3 - \omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^3 +$
$2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 - 8c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 5c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^3 - 2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6 - v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^2 - 6c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6 + 2c_s^2\omega_8\omega_5\omega_{18}^2\omega_6^3 -$
$\omega_8^2\omega_5^2\omega_{18}^2\omega_6^3 - v_3^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3 + 2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_6^2 + 2v_3^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6 + v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^3 - 11c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_6^2$

$C_{59} = -9\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 54\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} +$
$6\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 - 6v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 18v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 18\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} +$
$6v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 - 54\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 6\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 - 12\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 24c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$24\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_{19} + 12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19} - 12v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19} - 9v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 9\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 +$
$24\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_{19} - 12\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_{19} + 12v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_{19} - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 6\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 54\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} +$
$6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 6v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$6\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 3\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 36\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_{19} - 3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 36\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} -$
$12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 + 12v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - 24c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 24\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} -$
$12v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 42\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 + 12\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - 12v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 + 18\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 12v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} -$
$12\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} + 42\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 36\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_{19} + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 9\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 +$
$12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 12v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 12\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} -$
$36\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19} - 12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 + 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 + 6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 6v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} +$
$6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 +$
$18v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} - 18\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} - 12v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 12\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} +$
$24c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 18\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6 -$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_{18}^2\omega_6^2\omega_{19} + 24\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} + 6\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} -$
$6v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} +$
$12\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 - 36\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} +$
$12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2 + 54\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} + 6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} +$
$6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6 - 12\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} + 12v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_6\omega_{19} - 12\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$
$6\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} + 12v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 30\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19} +$
$12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_{19} - 12v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_{19} + 4v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2\omega_6^2\omega_{19}$

$C_{60} = -4\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 - 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 2\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 12v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$
$12v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 12v_3^2\omega_7\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} + 12v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 2\omega_7c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} -$
$4c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 - 4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 12v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 - 4\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 24v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} +$
$8\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 3\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 6v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 12v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} -$
$2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 - 3\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 4\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} +$
$4c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 12v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 4\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} +$
$4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 - 12v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 - 4\omega_7c_s^2\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} +$
$6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} - 12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} + 8\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} -$
$2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} + 6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} - 6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 4c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 +$

$4\omega_7 c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 + 2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 6v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$4\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 4c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} + 12v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$
$4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 2\omega_7 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 6v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 - 2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2 -$
$2\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 4\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19} + 24v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 8\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} +$
$2\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19} + 4c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 12v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19} -$
$4\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_{19} + 2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 6v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6^2\omega_{19} + 12v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$12v_3^2\omega_7\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7\omega_{20}\omega_{11}\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 -$
$4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} + 12v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_{19} - 9v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 3\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2 + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} -$
$12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19} - 4\omega_7 c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2\omega_6\omega_{19} - 3\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 9v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 + 12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6 + 2\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7 c_s^2\omega_{11}^2\omega_5\omega_{18}^2\omega_6\omega_{19} - 8\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} -$
$12v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} + 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19} - 12v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7\omega_{11}^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 -$
$6v_3^2\omega_7\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 12v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$
$4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 - 12v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2\omega_6 - 12v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 6v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}$

$C_{61} = 24c_s^4\omega_{11}\omega_{18}^2 + 48c_s^2\omega_{11}\omega_{18}^2\omega_6 + 12c_s^4\omega_{11}^2\omega_6^2 + 30v_3^2\omega_{11}^2\omega_{18}\omega_6^2 + 24v_3^2\omega_{11}^2\omega_6 + 216v_3^2c_s^2\omega_{11}\omega_{18}^2 + 48v_3^4\omega_{11}\omega_{18}^2 - 48c_s^2\omega_{11}^2\omega_{18}\omega_6 + 72v_3^2c_s^2\omega_{11}^2\omega_6^2 +$
$12v_3^4\omega_{11}^2\omega_6^2 - 48v_3^4\omega_{11}\omega_{18}\omega_6 - 144v_3^2c_s^2\omega_{11}\omega_{18}\omega_6 - 36v_3^2\omega_{11}\omega_{18}^2\omega_6^2 + 24c_s^2\omega_{11}^2\omega_6 - c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2 - 24c_s^2\omega_{11}\omega_{18}^2 + 96v_3^2\omega_{11}\omega_{18}^2\omega_6 - 12c_s^2\omega_{11}^2\omega_6^2 +$
$12c_s^2\omega_{11}^2\omega_{18}\omega_6^2 - 24v_3^4\omega_{11}^2\omega_6 - 144v_3^2c_s^2\omega_{11}^2\omega_6 + 72v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^2 + 24v_3^4\omega_{11}\omega_{18}\omega_6^2 - 48v_3^2\omega_{11}\omega_{18}^2 - 96v_3^2\omega_{11}^2\omega_{18} - 96v_3^2\omega_{11}\omega_{18}\omega_6 - 12v_3^2\omega_{11}^2\omega_6^2 - 3v_3^4\omega_{11}^2\omega_{18}^2\omega_6^2 -$
$12v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 - 14c_s^2\omega_{11}\omega_{18}^2\omega_6^2 - 24c_s^4\omega_{11}^2\omega_6 - 48c_s^4\omega_{11}\omega_{18}^2\omega_6 + 36v_3^2\omega_{18}^2\omega_6^2 - 24c_s^4\omega_{11}^2\omega_{18} - 126v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2 - 30v_3^4\omega_{11}^2\omega_{18}\omega_6^2 +$
$24c_s^4\omega_{18}^2\omega_6 + 12c_s^2\omega_{18}^2\omega_6^2 + 48v_3^2\omega_{11}\omega_{18}\omega_6 + 48c_s^4\omega_{11}^2\omega_{18}\omega_6 + 72v_3^4\omega_{18}^2\omega_6 + 288v_3^2c_s^2\omega_{18}^2\omega_6 - 48v_3^4\omega_{11}^2\omega_{18} - 216v_3^2c_s^2\omega_{11}^2\omega_{18} + c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 +$
$36v_3^4\omega_{11}\omega_{18}^2\omega_6^2 + 150v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^2 - 144v_3^2c_s^2\omega_{18}^2\omega_6^2 - 36v_3^4\omega_{18}^2\omega_6^2 - 432v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6 - 96v_3^4\omega_{11}\omega_{18}^2\omega_6 - 24c_s^2\omega_{18}^2\omega_6 - 24v_3^2\omega_{11}\omega_{18}\omega_6^2 +$
$24c_s^2\omega_{11}^2\omega_{18} - 12c_s^4\omega_{11}^2\omega_{18}\omega_6^2 + 96v_3^4\omega_{11}^2\omega_{18}\omega_6 + 432v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6 - 12c_s^4\omega_{18}^2\omega_6^2 + 14c_s^4\omega_{11}\omega_{18}^2\omega_6^2 + 48v_3^2\omega_{11}^2\omega_{18} - 72v_3^2\omega_{18}^2\omega_6 + 3v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2$

$C_{62} = -24c_s^4\omega_{18}\omega_6^2 - 18v_3^4\omega_{18}\omega_6^3 - 12v_3^2c_s^2\omega_{18}\omega_6^3 + 48v_3^2\omega_{18}\omega_6 - 96v_3^2c_s^2\omega_{18}^2 + 48v_3^2c_s^2\omega_{18}\omega_6^2 + 72v_3^4\omega_{18}\omega_6^2 + 6c_s^4\omega_{18}\omega_6^3 - 24c_s^2\omega_{18}\omega_6 +$
$24c_s^2\omega_{18}\omega_6^2 + 18v_3^2\omega_{18}\omega_6^3 + 24v_3^2\omega_6^2 - 48v_3^4\omega_{18}\omega_6 - 24v_3^2c_s^2\omega_{18}\omega_6 - 72v_3^2\omega_{18}\omega_6^2 - 6c_s^2\omega_{18}\omega_6^3 + 24c_s^4\omega_{18}\omega_6 - 12v_3^2\omega_6^3 + 24v_3^2\omega_{18}^2\omega_6^2 + c_s^2\omega_{18}^2\omega_6^3 +$
$24c_s^4\omega_{18}^2 - 48c_s^4\omega_{18}^2\omega_6 - 8c_s^2\omega_{18}^2\omega_6^2 - 3v_3^2\omega_{18}^2\omega_6^3 + 24v_3^4\omega_{18}^2\omega_6 + 156v_3^2c_s^2\omega_{18}^2\omega_6 - 72v_3^2c_s^2\omega_{18}^2\omega_6^2 - 24v_3^4\omega_{18}^2\omega_6^2 - 3c_s^4\omega_{18}^2\omega_6^3 + 12c_s^2\omega_{18}^2\omega_6 +$
$12v_3^4\omega_6^3 + 12v_3^2c_s^2\omega_6^3 + 24c_s^4\omega_{18}^2\omega_6^2 + 3v_3^4\omega_{18}^2\omega_6^3 + 6v_3^2c_s^2\omega_{18}^2\omega_6^3 - 24v_3^2c_s^2\omega_6^2 - 24v_3^4\omega_6^2 - 24v_3^2\omega_{18}^2\omega_6$

$C_{63} = -120c_s^2\omega_{11}\omega_{18}^2\omega_6 - 72\omega_{11}^2\omega_{18}\omega_6 - 51v_3^2\omega_{11}^2\omega_{18}\omega_6^2 - 48v_3^2\omega_{11}^2\omega_6 + 72\omega_{11}\omega_{18}^2\omega_6 + 120c_s^2\omega_{11}^2\omega_{18}\omega_6 + 24\omega_{11}^2\omega_6 + 61v_3^2\omega_{11}\omega_{18}^2\omega_6^2 - 48c_s^2\omega_{11}^2\omega_6 +$
$60c_s^2\omega_{11}\omega_{18}^2 - 168v_3^2\omega_{11}\omega_{18}^2\omega_6 + 24c_s^2\omega_{11}^2\omega_6^2 - 33c_s^2\omega_{11}^2\omega_{18}\omega_6^2 - 25\omega_{11}\omega_{18}^2\omega_6^2 - 36\omega_{11}\omega_{18}^2 - 12\omega_{11}^2\omega_6^2 + 84v_3^2\omega_{11}\omega_{18}^2 + 168v_3^2\omega_{11}^2\omega_{18}\omega_6 + 24v_3^2\omega_{11}^2\omega_6^2 +$
$21\omega_{11}^2\omega_{18}\omega_6^2 + 39c_s^2\omega_{11}\omega_{18}^2\omega_6^2 - 60v_3^2\omega_{18}^2\omega_6^2 + 12c_s^2\omega_{11}\omega_{18}\omega_6^2 + 2\omega_{11}^2\omega_{18}^2\omega_6^2 - 36c_s^2\omega_{18}^2\omega_6^2 - 72v_3^2\omega_{11}\omega_{18}\omega_6 - 12\omega_{11}\omega_{18}\omega_6^2 + 24\omega_{18}^2\omega_6^2 - 3c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 +$
$36\omega_{11}^2\omega_{18} + 24\omega_{11}\omega_{18}\omega_6 - 48\omega_{18}^2\omega_6 + 72c_s^2\omega_{18}^2\omega_6 + 36v_3^2\omega_{11}\omega_{18}\omega_6^2 - 60c_s^2\omega_{11}^2\omega_{18} - 24c_s^2\omega_{11}\omega_{18}\omega_6 - 84v_3^2\omega_{11}^2\omega_{18} + 120v_3^2\omega_{18}^2\omega_6 - 5v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2$

2.3.4 Conservation of momentum: ρv_2

$$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{v_2 v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_1} + (v_2^2 + c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2v_2\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_2 v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_3} +$$
$$\frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_5)\frac{c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} +$$
$$(-2+\omega_{10}+6v_2^2-2\omega_{10}c_s^2+4c_s^2-3\omega_{10}v_2^2)\frac{\delta_l^2}{\omega_{10}\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + (2-\omega_{10})\frac{3v_2\rho\delta_l^2}{\omega_{10}\delta_t}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} +$$
$$(-2+\omega_7)\frac{c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_5)\frac{\rho c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial^2 v_2}{\partial x_1^2} + (-2+\omega_5)\frac{\rho c_s^2\delta_l^2}{2\omega_5\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_2} +$$
$$(-2+\omega_{10}+2v_2^2-3\omega_{10}c_s^2+6c_s^2-\omega_{10}v_2^2)\frac{v_2\delta_l^2}{2\omega_{10}\delta_t}\frac{\partial^2\rho}{\partial x_2^2} + (-2+\omega_{10}+6v_2^2-\omega_{10}c_s^2+2c_s^2-3\omega_{10}v_2^2)\frac{\rho\delta_l^2}{2\omega_{10}\delta_t}\frac{\partial^2 v_2}{\partial x_2^2} +$$
$$(-2+\omega_7)\frac{\rho c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial^2 v_3}{\partial x_2\partial x_3} + (-2+\omega_7)\frac{\rho c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial^2 v_2}{\partial x_3^2} + C_1\frac{v_2 v_1\delta_l^3}{12\omega_5\omega_9\omega_{12}\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + C_2\frac{v_2\rho\delta_l^3}{12\omega_5\omega_9\omega_{12}\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_3\frac{\rho v_1\delta_l^3}{6\omega_5^2\omega_{12}\delta_t}\frac{\partial^3 v_2}{\partial x_1^3} +$$
$$(-12-\omega_5^2+12\omega_5)\frac{c_s^4\delta_l^3}{6\omega_5^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + (-\omega_5^2+2\omega_5+\omega_5\omega_{12}-2\omega_{12})\frac{\rho v_1 c_s^2\delta_l^3}{\omega_5^2\omega_{12}\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} +$$
$$(12\omega_{10}\omega_5\omega_{15}+12\omega_{10}\omega_5+12\omega_5^2-12\omega_{10}\omega_{15}-12\omega_{10}\omega_5^2-12\omega_5\omega_{15}-\omega_{10}\omega_5^2\omega_{15})\frac{v_2\rho c_s^2\delta_l^3}{6\omega_{10}\omega_5^2\omega_{15}\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$C_4\frac{v_2 v_1\delta_l^3}{\omega_{10}^2\omega_5\omega_{15}\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} + C_5\frac{v_2\rho\delta_l^3}{12\omega_{10}^2\omega_5^2\omega_{15}\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_6\frac{\rho v_1\delta_l^3}{\omega_{10}^2\omega_5\omega_{15}\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + C_7\frac{\delta_l^3}{12\omega_{10}^2\delta_t}\frac{\partial^3\rho}{\partial x_2^3} +$$
$$(-24+24\omega_{10}-4\omega_{10}^2+60v_2^2-36\omega_{10}c_s^2+36c_s^2-60\omega_{10}v_2^2+11\omega_{10}^2v_2^2+5\omega_{10}^2c_s^2)\frac{v_2\rho\delta_l^3}{6\omega_{10}^2\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} +$$
$$(\omega_5^2-\omega_7\omega_8+\omega_7\omega_5+\omega_7\omega_8\omega_5-\omega_8\omega_5-\omega_7\omega_5^2)\frac{v_3\rho c_s^2\delta_l^3}{\omega_7\omega_8\omega_5^2\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_3} +$$
$$(-\omega_7\omega_8\omega_5\omega_6+6\omega_7\omega_6-6\omega_7\omega_8-6\omega_7\omega_5\omega_6+6\omega_5\omega_6+6\omega_7\omega_8\omega_5-6\omega_8\omega_5)\frac{v_2\rho c_s^2\delta_l^3}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} +$$
$$(\omega_5^2-\omega_7\omega_8+\omega_7\omega_5+\omega_7\omega_8\omega_5-\omega_8\omega_5-\omega_7\omega_5^2)\frac{v_3\rho c_s^2\delta_l^3}{\omega_7\omega_8\omega_5^2\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} +$$
$$(-\omega_7\omega_8-\omega_7^2\omega_5+\omega_7^2+\omega_7\omega_5+\omega_7\omega_8\omega_5-\omega_8\omega_5)\frac{\rho v_1 c_s^2\delta_l^3}{\omega_7^2\omega_8\omega_5\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + C_8\frac{v_2 v_3\delta_l^3}{\omega_{16}\omega_{10}^2\omega_7\delta_t}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + C_9\frac{v_3\rho\delta_l^3}{\omega_{16}\omega_{10}^2\omega_7\delta_t}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3}$$
$$+ C_{10}\frac{v_2\rho\delta_l^3}{12\omega_{16}\omega_{10}^2\omega_7^2\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} +$$

$$
\begin{aligned}
&(-\omega_7\omega_8\omega_5\omega_6 + 6\omega_7\omega_6 - 6\omega_7\omega_8 - 6\omega_7\omega_5\omega_6 + 6\omega_5\omega_6 + 6\omega_7\omega_8\omega_5 - 6\omega_8\omega_5)\frac{v_2\rho c_s^2\delta_l^3}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + \\
&(-\omega_7\omega_8 - \omega_7^2\omega_5 + \omega_7^2 + \omega_7\omega_5 + \omega_7\omega_8\omega_5 - \omega_8\omega_5)\frac{\rho v_1 c_s^2\delta_l^3}{\omega_7^2\omega_8\omega_5\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_3^2} + (-12 + 12\omega_7 - \omega_7^2)\frac{c_s^4\delta_l^3}{6\omega_7^2\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} + \\
&(-12\omega_{16}\omega_{10} - 12\omega_{10}\omega_7^2 - \omega_{16}\omega_{10}\omega_7^2 - 12\omega_{16}\omega_7 + 12\omega_{16}\omega_{10}\omega_7 + 12\omega_{10}\omega_7 + 12\omega_7^2)\frac{v_2\rho c_s^2\delta_l^3}{6\omega_{16}\omega_{10}\omega_7^2\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + \\
&(2\omega_7 - \omega_7^2 + \omega_7\omega_{19} - 2\omega_{19})\frac{v_3\rho c_s^2\delta_l^3}{\omega_7^2\omega_{19}\delta_t}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + C_{11}\frac{v_2 v_3\delta_l^3}{12\omega_7\omega_{11}\omega_{19}\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_{12}\frac{v_3\rho\delta_l^3}{6\omega_7^2\omega_{19}\delta_t}\frac{\partial^3 v_2}{\partial x_3^3} + C_{13}\frac{v_2\rho\delta_l^3}{12\omega_7\omega_{11}\omega_{19}\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + \\
&C_{14}\frac{v_2\delta_l^4}{24\omega_5^2\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C_{15}\frac{v_2\rho v_1\delta_l^4}{12\omega_5^2\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_{16}\frac{\rho\delta_l^4}{24\omega_5^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^4} + C_{17}\frac{v_1\delta_l^4}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + \\
&C_{18}\frac{\rho\delta_l^4}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{19}\frac{v_2\rho v_1\delta_l^4}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{20}\frac{v_2\delta_l^4}{12\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + \\
&C_{21}\frac{v_2\rho v_1\delta_l^4}{2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{22}\frac{\rho\delta_l^4}{12\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{23}\frac{v_1\delta_l^4}{4\omega_{10}^3\omega_5^2\omega_{15}^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + \\
&C_{24}\frac{\rho\delta_l^4}{12\omega_{10}^3\omega_5^3\omega_{15}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{25}\frac{v_2\rho v_1\delta_l^4}{4\omega_{10}^3\omega_5^2\omega_{15}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{26}\frac{v_2\delta_l^4}{12\omega_{10}^3\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C_{27}\frac{\rho\delta_l^4}{12\omega_{10}^3\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + \\
&C_{28}\frac{v_2 v_3 v_1\delta_l^4}{4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{29}\frac{v_2 v_3\rho\delta_l^4}{4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{30}\frac{v_3\rho v_1\delta_l^4}{2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_3} + \\
&C_{31}\frac{v_2\rho v_1\delta_l^4}{12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_{32}\frac{2v_3 c_s^4\delta_l^4}{\omega_7^2\omega_8^2\omega_5^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{33}\frac{v_3\rho v_1 c_s^2\delta_l^4}{\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{34}\frac{v_2 v_3\rho c_s^2\delta_l^4}{2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C_{35}\frac{\rho c_s^2\delta_l^4}{12\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{36}\frac{v_2 v_3 v_1\delta_l^4}{\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{37}\frac{v_2 v_3\rho\delta_l^4}{2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{38}\frac{v_3\rho v_1\delta_l^4}{\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} \\
&+ C_{39}\frac{v_2\rho v_1\delta_l^4}{2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{40}\frac{v_3\delta_l^4}{4\omega_{16}^2\omega_{10}^3\omega_7^2\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{41}\frac{v_2 v_3\rho\delta_l^4}{4\omega_{16}^2\omega_{10}^3\omega_7^2\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + \\
&C_{42}\frac{\rho\delta_l^4}{12\omega_{16}^2\omega_{10}^3\omega_7^3\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_{43}\frac{\delta_l^4}{12\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{44}\frac{\rho\delta_l^4}{4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + \\
&C_{45}\frac{\rho\delta_l^4}{4\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2} + C_{46}\frac{v_3\rho\delta_l^4}{2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + \\
&C_{47}\frac{\delta_l^4}{2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C_{48}\frac{\rho\delta_l^4}{12\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19}\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{49}\frac{v_2\rho\delta_l^4}{2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{50}\frac{\rho\delta_l^4}{2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{51}\frac{v_2\delta_l^4}{12\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{52}\frac{\rho\delta_l^4}{12\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{53}\frac{v_2 v_3\rho\delta_l^4}{2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + \\
&C_{54}\frac{v_2 v_3 v_1\delta_l^4}{4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{55}\frac{v_2 v_3\rho\delta_l^4}{12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{56}\frac{v_3\rho v_1\delta_l^4}{2\omega_7^3\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_3^3} + \\
&C_{57}\frac{v_2\rho v_1\delta_l^4}{4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C_{58}\frac{v_3\delta_l^4}{12\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{59}\frac{v_2 v_3\rho\delta_l^4}{12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&C_{60}\frac{\rho\delta_l^4}{12\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{61}\frac{v_2\delta_l^4}{24\omega_7^2\omega_{11}^2\omega_{19}^2\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{62}\frac{\rho\delta_l^4}{24\omega_7^3\omega_{19}^2\delta_t}\frac{\partial^4 v_2}{\partial x_3^4} + C_{63}\frac{v_2 v_3\rho\delta_l^4}{12\omega_7^2\omega_{11}^2\omega_{19}^2\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$C_1 = v_1^2\omega_5\omega_9\omega_{12} + 36c_s^2\omega_{12} + 6\omega_5\omega_{12} + 18c_s^2\omega_5\omega_9 - \omega_5\omega_9\omega_{12} - 36c_s^2\omega_9 - 6\omega_5\omega_9 - 18c_s^2\omega_5\omega_{12} + 12v_1^2\omega_{12} + 3c_s^2\omega_5\omega_9\omega_{12} - 12v_1^2\omega_9 + 12\omega_9 - 12\omega_{12} + 6v_1^2\omega_5\omega_9 - 6v_1^2\omega_5\omega_{12}$$

$$C_2 = 3v_1^2\omega_5\omega_9\omega_{12} + 12c_s^2\omega_{12} + 6\omega_5\omega_{12} + 6c_s^2\omega_5\omega_9 - \omega_5\omega_9\omega_{12} - 12c_s^2\omega_9 - 6\omega_5\omega_9 - 6c_s^2\omega_5\omega_{12} + 36v_1^2\omega_{12} + c_s^2\omega_5\omega_9\omega_{12} - 36v_1^2\omega_9 + 12\omega_9 - 12\omega_{12} + 18v_1^2\omega_5\omega_9 - 18v_1^2\omega_5\omega_{12}$$

$$C_3 = -6c_s^2\omega_5 - 6v_1^2\omega_5 - 3\omega_5^2 - v_1^2\omega_5^2\omega_{12} + 3v_1^2\omega_5^2 + 3c_s^2\omega_5^2 + \omega_5^2\omega_{12} - 3c_s^2\omega_5^2\omega_{12} + 6\omega_5 - 12c_s^2\omega_{12} - 3\omega_5\omega_{12} + 15c_s^2\omega_5\omega_{12} + 3v_1^2\omega_5\omega_{12}$$

$$C_4 = -\omega_{10}v_2^2\omega_5\omega_{15} + 3\omega_{10}c_s^2\omega_{15} + \omega_{10}\omega_5\omega_{15} + \omega_{10}^2 + \omega_{10}\omega_5 - \omega_{10}\omega_{15} + 3c_s^2\omega_5\omega_{15} + \omega_{10}^2v_2^2\omega_5 - \omega_5\omega_{15} - 3\omega_{10}c_s^2\omega_5 - \omega_{10}^2v_2^2 - \omega_{10}v_2^2\omega_5 + 3\omega_{10}^2c_s^2\omega_5 - 3\omega_{10}c_s^2\omega_5\omega_{15} - \omega_{10}^2\omega_5 - 3\omega_{10}^2c_s^2 + \omega_{10}v_2^2\omega_{15} + v_2^2\omega_5\omega_{15}$$

$$C_5 = -12\omega_{10}c_s^2\omega_5^2 + 12\omega_{10}^2v_2^2\omega_5^2 + 42\omega_{10}^2c_s^2\omega_5\omega_{15} + 3\omega_{10}^2\omega_5^2\omega_{15} + 12v_2^2\omega_5^2\omega_{15} - 18\omega_{10}c_s^2\omega_5^2\omega_{15} + 12\omega_{10}\omega_5^2 - 12\omega_{10}^2v_2^2\omega_5 - 3\omega_{10}^2v_2^2\omega_5^2\omega_{15} + 36c_s^2\omega_5^2\omega_{15} - 12\omega_5^2\omega_{15} + 6\omega_{10}^2v_2^2\omega_5\omega_{15} - 12\omega_{10}^2c_s^2\omega_5 - 12\omega_{10}^2\omega_5^2 - 24\omega_{10}c_s^2\omega_5\omega_{15} + 12\omega_{10}^2c_s^2\omega_5^2 - 11\omega_{10}^2c_s^2\omega_5^2\omega_{15} + 12\omega_{10}^2\omega_5 - 6\omega_{10}^2\omega_5\omega_{15} - 12\omega_{10}v_2^2\omega_5^2 - 24\omega_{10}^2c_s^2\omega_{15} - 6\omega_{10}v_2^2\omega_5^2\omega_{15} + 6\omega_{10}\omega_5^2\omega_{15}$$

$$C_6 = -3\omega_{10}v_2^2\omega_5\omega_{15} + \omega_{10}c_s^2\omega_{15} + \omega_{10}\omega_5\omega_{15} + \omega_{10}^2 + \omega_{10}\omega_5 - \omega_{10}\omega_{15} + c_s^2\omega_5\omega_{15} + 3\omega_{10}^2v_2^2\omega_5 - \omega_5\omega_{15} - \omega_{10}c_s^2\omega_5 - 3\omega_{10}^2v_2^2 - 3\omega_{10}v_2^2\omega_5 + \omega_{10}^2c_s^2\omega_5 - \omega_{10}c_s^2\omega_5\omega_{15} - \omega_{10}^2\omega_5 - \omega_{10}^2c_s^2 + 3\omega_{10}v_2^2\omega_{15} + 3v_2^2\omega_5\omega_{15}$$

$$C_7 = \omega_{10}^2c_s^4 - 36v_2^2 + 12\omega_{10}c_s^2 - 12c_s^2 + 36\omega_{10}v_2^2 + 24\omega_{10}^2v_2^2c_s^2 + 7\omega_{10}^2v_2^4 + 12c_s^4 - 36\omega_{10}v_2^4 - 7\omega_{10}^2v_2^2 - 144\omega_{10}v_2^2c_s^2 - \omega_{10}^2c_s^2 + 144v_2^2c_s^2 + 36v_2^4 - 12\omega_{10}c_s^4$$

$$C_8 = 3\omega_{16}\omega_{10}c_s^2 - \omega_{16}\omega_{10} + \omega_{10}^2 + \omega_{10}^2v_2^2\omega_7 + 3\omega_{10}^2\omega_7c_s^2 - \omega_{16}\omega_7 + \omega_{16}\omega_{10}\omega_7 + \omega_{16}\omega_{10}v_2^2 + \omega_{10}\omega_7 - \omega_{10}^2\omega_7 - \omega_{10}^2v_2^2 - \omega_{16}\omega_{10}v_2^2\omega_7 + \omega_{16}v_2^2\omega_7 - 3\omega_{16}\omega_{10}\omega_7c_s^2 + 3\omega_{16}\omega_7c_s^2 - 3\omega_{10}^2c_s^2 - \omega_{10}v_2^2\omega_7 - 3\omega_{10}\omega_7c_s^2$$

$C_9 = \omega_{16}\omega_{10}c_s^2 - \omega_{16}\omega_{10} + \omega_{10}^2 + 3\omega_{10}^2v_2^2\omega_7 + \omega_{10}^2\omega_7c_s^2 - \omega_{16}\omega_7 + \omega_{16}\omega_{10}\omega_7 + 3\omega_{16}\omega_{10}v_2^2 + \omega_{10}\omega_7 - \omega_{10}^2\omega_7 - 3\omega_{10}^2v_2^2 - 3\omega_{16}\omega_{10}v_2^2\omega_7 + 3\omega_{16}v_2^2\omega_7 - \omega_{16}\omega_{10}\omega_7c_s^2 + \omega_{16}\omega_7c_s^2 - \omega_{10}^2c_s^2 - 3\omega_{10}v_2^2\omega_7 - \omega_{10}\omega_7c_s^2$

$C_{10} = -3\omega_{16}\omega_{10}^2v_2^2\omega_7^2 - 12\omega_{10}\omega_7^2c_s^2 + 12\omega_{10}\omega_7^2 - 12\omega_{10}^2v_2^2\omega_7 - 12\omega_{10}^2\omega_7c_s^2 - 12\omega_{16}\omega_7^2 + 6\omega_{16}\omega_{10}\omega_7^2 - 18\omega_{16}\omega_{10}\omega_7^2c_s^2 + 36\omega_{16}\omega_7^2c_s^2 + 12\omega_{10}^2v_2^2\omega_7^2 + 6\omega_{16}\omega_{10}^2v_2^2\omega_7 + 42\omega_{16}\omega_{10}^2\omega_7c_s^2 + 12\omega_{10}^2\omega_7 - 12\omega_{10}v_2^2\omega_7^2 - 11\omega_{16}\omega_{10}^2\omega_7^2c_s^2 - 6\omega_{16}\omega_{10}^2\omega_7 - 24\omega_{16}\omega_{10}\omega_7c_s^2 + 12\omega_{10}^2\omega_7^2c_s^2 + 3\omega_{16}\omega_{10}^2\omega_7^2 + 12\omega_{16}v_2^2\omega_7^2 - 6\omega_{16}\omega_{10}v_2^2\omega_7^2 - 24\omega_{16}\omega_{10}^2c_s^2 - 12\omega_{10}^2\omega_7^2$

$C_{11} = 6v_3^2\omega_7\omega_{11} - 6\omega_7\omega_{11} - 12v_3^2\omega_{11} - 6v_3^2\omega_7\omega_{19} + 12\omega_{11} + 12v_3^2\omega_{19} + 6\omega_7\omega_{19} - \omega_7\omega_{11}\omega_{19} - 36c_s^2\omega_{11} + 3\omega_7c_s^2\omega_{11}\omega_{19} + 18\omega_7c_s^2\omega_{11} - 18\omega_7c_s^2\omega_{19} + 36c_s^2\omega_{19} + v_3^2\omega_7\omega_{11}\omega_{19} - 12\omega_{19}$

$C_{12} = 6\omega_7 - 3\omega_7^2c_s^2\omega_{19} + 3v_3^2\omega_7\omega_{19} - 3\omega_7^2 - 3\omega_7\omega_{19} + 3\omega_7^2c_s^2 + \omega_7^2\omega_{19} - 6\omega_7c_s^2 - v_3^2\omega_7^2\omega_{19} + 3v_3^2\omega_7^2 - 6v_3^2\omega_7 + 15\omega_7c_s^2\omega_{19} - 12c_s^2\omega_{19}$

$C_{13} = 18v_3^2\omega_7\omega_{11} - 6\omega_7\omega_{11} - 36v_3^2\omega_{11} - 18v_3^2\omega_7\omega_{19} + 12\omega_{11} + 36v_3^2\omega_{19} + 6\omega_7\omega_{19} - \omega_7\omega_{11}\omega_{19} - 12c_s^2\omega_{11} + \omega_7c_s^2\omega_{11}\omega_{19} + 6\omega_7c_s^2\omega_{11} - 6\omega_7c_s^2\omega_{19} + 12c_s^2\omega_{19} + 3v_3^2\omega_7\omega_{11}\omega_{19} - 12\omega_{19}$

$C_{14} = -12c_s^4\omega_5^2\omega_9^2\omega_{12} + 12c_s^2\omega_5^2\omega_{12}^2 + 30v_1^2\omega_5^2\omega_9^2\omega_{12} - 36v_1^4\omega_5^2\omega_{12}^2 + 432v_1^2c_s^2\omega_5\omega_9^2\omega_{12} + 36v_1^4\omega_5^2\omega_9\omega_{12}^2 - 14c_s^2\omega_5^2\omega_9\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^2 + 12v_1^4\omega_5^2\omega_9^2 + 48v_1^2\omega_5\omega_9\omega_{12} - 24c_s^4\omega_9^2\omega_{12} + 48v_1^2\omega_9^2\omega_{12} + 72v_1^2c_s^2\omega_5^2\omega_9\omega_{12} - 48c_s^2\omega_5\omega_9^2\omega_{12} + 288v_1^2c_s^2\omega_5\omega_{12}^2 + 96v_1^4\omega_5\omega_9^2\omega_{12} + 36v_1^2\omega_5^2\omega_{12}^2 + 216v_1^2c_s^2\omega_9\omega_{12}^2 + 150v_1^2c_s^2\omega_5^2\omega_9\omega_{12}^2 - 12c_s^4\omega_5^2\omega_{12}^2 + 96v_1^2\omega_5\omega_9\omega_{12}^2 - 144v_1^2c_s^2\omega_5\omega_9^2 - 12v_1^2\omega_5^2\omega_9^2 + 12c_s^4\omega_5^2\omega_9^2 - 48c_s^4\omega_5\omega_9\omega_{12}^2 + 24v_1^4\omega_5^2\omega_9\omega_{12} - 48v_1^4\omega_9^2\omega_{12} - c_s^4\omega_5^2\omega_9^2\omega_{12}^2 + 24c_s^2\omega_9^2\omega_{12} + 3v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 30v_1^4\omega_5^2\omega_9^2\omega_{12} - 432v_1^2c_s^2\omega_5\omega_9\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9^2\omega_{12} + 14c_s^4\omega_5^2\omega_9\omega_{12}^2 - 36v_1^2\omega_5^2\omega_9\omega_{12}^2 - 48v_1^2\omega_9\omega_{12}^2 - 144v_1^2c_s^2\omega_5^2\omega_{12}^2 + 24c_s^4\omega_9\omega_{12}^2 + 24c_s^4\omega_5\omega_{12}^2 - 48v_1^4\omega_5\omega_9\omega_{12} - 72v_1^2\omega_5\omega_{12}^2 - 12v_1^2c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 72v_1^2c_s^2\omega_5^2\omega_9^2 - 24c_s^4\omega_5\omega_9^2 + 24v_1^2\omega_5\omega_9^2 - 96v_1^2\omega_5\omega_9^2\omega_{12} + 48c_s^4\omega_5\omega_9^2\omega_{12} + 48c_s^2\omega_5\omega_9\omega_{12}^2 - 216v_1^2c_s^2\omega_9^2\omega_{12} - 126v_1^2c_s^2\omega_5^2\omega_9^2\omega_{12} - 96v_1^4\omega_5\omega_9\omega_{12}^2 - 24c_s^2\omega_9\omega_{12}^2 + 48v_1^4\omega_9\omega_{12}^2 + 72v_1^4\omega_5\omega_{12}^2 - 24v_1^2\omega_5^2\omega_9\omega_{12} - 24c_s^2\omega_5\omega_{12}^2 - 144v_1^2c_s^2\omega_5\omega_9\omega_{12} - 3v_1^4\omega_5^2\omega_9^2\omega_{12}^2 - 24v_1^4\omega_5\omega_9^2 + c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 24c_s^2\omega_5\omega_9^2$

$C_{15} = -36c_s^2\omega_5^2\omega_{12}^2 - 51v_1^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_5^2\omega_9^2 + 39c_s^2\omega_5^2\omega_9\omega_{12}^2 + 24c_s^2\omega_5^2\omega_9^2 + 24\omega_5^2\omega_{12}^2 - 72v_1^2\omega_5\omega_9\omega_{12} - 25\omega_5^2\omega_9\omega_{12}^2 - 84v_1^2\omega_9^2\omega_{12} + 120c_s^2\omega_5\omega_9^2\omega_{12} - 12\omega_5^2\omega_9\omega_{12} - 60v_1^2\omega_5^2\omega_{12}^2 - 168v_1^2\omega_5\omega_9\omega_{12}^2 + 24v_1^2\omega_5^2\omega_9^2 + 36\omega_9^2\omega_{12} - 72\omega_5\omega_9^2\omega_{12} + 12c_s^2\omega_5^2\omega_9\omega_{12} - 60c_s^2\omega_9^2\omega_{12} - 5v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 33c_s^2\omega_5^2\omega_9^2\omega_{12} + 24\omega_5\omega_9\omega_{12} + 61v_1^2\omega_5^2\omega_9\omega_{12}^2 + 84v_1^2\omega_9\omega_{12}^2 + 21\omega_5^2\omega_9^2\omega_{12} - 24c_s^2\omega_5\omega_9\omega_{12} + 120v_1^2\omega_5\omega_{12}^2 - 48v_1^2\omega_5\omega_9^2 + 168v_1^2\omega_5\omega_9^2\omega_{12} - 120c_s^2\omega_5\omega_9\omega_{12}^2 + 2\omega_5^2\omega_9^2\omega_{12}^2 + 60c_s^2\omega_9\omega_{12}^2 + 24\omega_5\omega_9^2 + 36v_1^2\omega_5^2\omega_9\omega_{12} + 72c_s^2\omega_5\omega_{12}^2 - 36\omega_9\omega_{12}^2 - 48\omega_5\omega_{12}^2 + 72\omega_5\omega_9\omega_{12}^2 - 3c_s^2\omega_5^2\omega_9^2\omega_{12}^2 - 48c_s^2\omega_5\omega_9^2$

$C_{16} = -8c_s^2\omega_5^2\omega_{12}^2 - 24v_1^4\omega_5^2\omega_{12}^2 - 3v_1^2\omega_5^3\omega_{12}^2 - 3c_s^4\omega_5^3\omega_{12}^2 + 12v_1^2c_s^2\omega_5^3 - 6c_s^2\omega_5^3\omega_{12} - 18v_1^4\omega_5^3\omega_{12} - 24v_1^2c_s^2\omega_5\omega_{12} - 24v_1^2c_s^2\omega_5^2 - 72v_1^2\omega_5^2\omega_{12} - 24c_s^4\omega_5^2\omega_{12} + 24v_1^2\omega_5^2 + 156v_1^2c_s^2\omega_5\omega_{12}^2 + 24v_1^2\omega_5^2\omega_{12}^2 + 24c_s^4\omega_5^2\omega_{12}^2 + c_s^2\omega_5^3\omega_{12}^2 + 3v_1^4\omega_5^3\omega_{12}^2 + 24c_s^4\omega_{12}^2 + 18v_1^2\omega_5^3\omega_{12} + 6c_s^4\omega_5^3\omega_{12} - 12v_1^2\omega_5^3 + 24c_s^2\omega_5^2\omega_{12} + 72v_1^4\omega_5^2\omega_{12} - 12v_1^2c_s^2\omega_5^3\omega_{12} - 48v_1^4\omega_5\omega_{12} - 24c_s^2\omega_5\omega_{12} - 72v_1^2c_s^2\omega_5^2\omega_{12}^2 - 96v_1^2c_s^2\omega_{12}^2 - 48c_s^4\omega_5\omega_{12}^2 - 24v_1^2\omega_5\omega_{12}^2 + 12v_1^4\omega_5^3 + 48v_1^2c_s^2\omega_5^2\omega_{12} + 24c_s^4\omega_5\omega_{12} + 48v_1^2\omega_5\omega_{12} - 24v_1^4\omega_5^2 + 24v_1^4\omega_5\omega_{12}^2 + 12c_s^2\omega_5\omega_{12}^2 + 6v_1^2c_s^2\omega_5^3\omega_{12}^2$

$C_{17} = 54\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 15\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 45\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36\omega_{10}c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - \omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 6\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12v_2^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 18\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 18c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 36\omega_{10}v_2^2c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 12v_1^2c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 24\omega_{10}v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}v_2^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 3\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12v_2^2\omega_5^3\omega_9^2\omega_{12}^2 - 12\omega_{10}v_2^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 48\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}v_1^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 3\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 6v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 18v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 6v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12c_s^2\omega_5^3\omega_9^2\omega_{12}^2 - 108\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{10}v_1^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 15\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12v_2^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 + 6\omega_{10}v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + \omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 9\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 3\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}v_1^2c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 18\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 18\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 36\omega_{10}c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12v_1^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 24\omega_{10}v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 72\omega_{10}v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36\omega_{10}c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 36\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 12\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 9\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}v_2^2\omega_5^3\omega_9^2\omega_{12}^2 + 27\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 42\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}v_2^2v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 6v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 36\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 6\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{10}v_2^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10}v_2^2c_s^2\omega_5^3\omega_9^2\omega_{12}^2 - 12\omega_{10}v_2^2v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10}v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 18\omega_{10}v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 6\omega_{10}v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 36\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 24v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 72v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 96\omega_{10}c_s^4\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 6\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 5\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18\omega_{10}v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 6\omega_{10}v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^4\omega_5^3\omega_9^2\omega_{12}^2 + 6v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 6\omega_{10}v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36\omega_{10}c_s^4\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 18\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 - 6\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 36v_2^2c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 12\omega_{10}v_1^2c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 24v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 156\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}v_2^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 15\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 144\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 6\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 48\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}v_2^2v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 36\omega_{10}v_2^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 12c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 6\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 18\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 60\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 36v_2^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 24\omega_{10}v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 72\omega_{10}v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 15\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}$

$C_{18} = 18\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 45\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 15\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 36\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 6\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12v_2^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 6\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 6c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}v_2^2c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 36v_1^2c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 24\omega_{10}v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}v_2^2\omega_5^2\omega_9^2\omega_{12}^2 - 18\omega_{10}v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} +$

$6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 72v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 24v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 30\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} -$
$18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12v_2^2\omega_5^3\omega_9^2\omega_{12}^2 - 36\omega_{10}v_2^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 48\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$36\omega_{10}v_1^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - \omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 -$
$6v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 18v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 24v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12c_s^2\omega_5^3\omega_9^2\omega_{12}^2 - 36\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$108\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 36\omega_{10}v_1^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36v_2^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 +$
$18\omega_{10}v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10}v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 9\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36\omega_{10}v_1^2c_s^2\omega_5^3\omega_9^2\omega_{12}^2 +$
$6\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 54\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 -$
$12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 36v_1^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 72\omega_{10}v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$24\omega_{10}v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 12\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 15\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$
$36\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 48\omega_{10}v_1^2c_s^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}v_2^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 27\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$12\omega_{10}v_2^2\omega_5^3\omega_9^2\omega_{12}^2 + 9\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36\omega_{10}v_2^2v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 6v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 12\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 6\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{10}v_2^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} +$
$12\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 18v_1^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}v_2^2c_s^2\omega_5^3\omega_9^2\omega_{12}^2 - 36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}v_2^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 -$
$6\omega_{10}v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 18\omega_{10}v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 72v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$60\omega_{10}v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 24v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^4\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 6\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 +$
$18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6\omega_{10}v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 36\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 15\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 60\omega_{10}v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} +$
$6\omega_{10}v_2^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 18\omega_{10}v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5^3\omega_9^2\omega_{12}^2 + 6v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 6\omega_{10}v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 +$
$12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + \omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^4\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 6\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 -$
$18\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 12v_2^2c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 36\omega_{10}v_1^2c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 24v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}v_2^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 -$
$12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 12\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 5\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 48\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 +$
$18\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 144\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}v_2^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 12c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 +$
$18\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 6\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 5\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 12v_2^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 -$
$72\omega_{10}v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36v_2^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 24\omega_{10}v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 102\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 15\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} +$
$12\omega_{10}c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}$

$C_{19} = -132\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 84\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$36\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 96\omega_{10}^2c_s^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 84\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$24\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + \omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$12\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 18\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$
$42\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 12\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 72\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 72\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$66\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 +$
$24\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 - 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 18\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} + 24\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 24\omega_{10}v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 24\omega_{10}^2v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 -$
$4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 48\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 - 24\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 36\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 36\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$36\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 - \omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 18\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} +$
$12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$12\omega_{10}v_1^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 66\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 90\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 24\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} + 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} +$
$48\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 66\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 60\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 24c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$
$12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 + 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 + 18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$
$24c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 - 18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 156\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2$

$C_{20} = 12\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}^3v_2^2v_1^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_{12} +$
$12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_{12} + 36\omega_{10}^3v_1^2c_s^2\omega_5^2\omega_{15}^2 + 12\omega_{10}^3v_2^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} +$
$18\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2 + 6\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{12} - 12\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}^3v_1^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} -$
$6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{12} - 12\omega_{10}^3v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 +$
$12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^3v_1^2\omega_5\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 5\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3v_2^2v_1^2\omega_5^3\omega_{21}\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 +$
$36v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2\omega_{12} - \omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$12\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}\omega_{12} - 88\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{12} + 36\omega_{10}^3v_1^2c_s^2\omega_5^2\omega_{15}\omega_{12} + 36\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^3\omega_{21}\omega_{12} +$
$6\omega_{10}^3v_2^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} - 18\omega_{10}^3v_1^2c_s^2\omega_5^3\omega_{15}^2 + 12\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_{12} - 18\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$18\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}\omega_{12} - 6\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} + 24\omega_{10}^2v_2^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}^3v_1^2c_s^2\omega_5^3\omega_{21}\omega_{12} - 12\omega_{10}^2v_2^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} -$
$12\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{15}^2\omega_{12} + 36\omega_{10}^3c_s^4\omega_5^2\omega_{15}\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 72\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 24\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$
$84\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}^3v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$
$24\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 72\omega_{10}^3v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{12} - 42\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$12\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{15}\omega_{12} - 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2 + 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12} -$
$36\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2\omega_{12} - 36\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 2\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^3v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} -$
$2\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 48\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 +$
$12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{12} - 12\omega_{10}^3v_2^2v_1^2\omega_5^2\omega_{21}\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{12} + 36\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2 - 6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2 +$
$12\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{12} + 36\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 - 36\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2 - 42\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3v_2^2v_1^2\omega_5^2\omega_{15}^2 - 36\omega_{10}^3v_1^2c_s^2\omega_5^2\omega_{15}^2\omega_{12} + 12\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{21}\omega_{12} - 18\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 -$
$36\omega_{10}^3v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 18\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_2^2v_1^2\omega_5^3\omega_{15}\omega_{12} - 6\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{15}^2 - 12\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$
$12\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 18\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2 + 6\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2 + 30\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{12} - 54\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} -$

$12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{12} - 96\omega_{10}^3c_s^4\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 36\omega_{10}^3v_1^2c_s^2\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^3\omega_{15}\omega_{12} +$
$180\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2 + 6\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}^3c_s^4\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} +$
$24\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 72\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12} - 18\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12} + 108\omega_{10}^3v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} -$
$12\omega_{10}^3v_2^2v_1^2\omega_5^2\omega_{15}^2\omega_{12} + 18\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} - 36\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{10}^3v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} +$
$12\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{15}^2 - 24\omega_{10}^3v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{12} + 72\omega_{10}^2v_1^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}^3v_2^2v_1^2\omega_5^3\omega_{15}^2 + 150\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} +$
$12\omega_{10}^3v_1^2\omega_5^2\omega_{21}\omega_{12} + 18\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 24\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^3v_1^2c_s^2\omega_5^3\omega_{15}\omega_{12} + \omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}$

$C_{21} = 3\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 4\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 4\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + \omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$
$6\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 5\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 8\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 9\omega_{10}^3v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 -$
$2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 4\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - \omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 6\omega_{10}^3v_2^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^3v_2^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 -$
$2\omega_{10}^3v_2^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 4\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 + 4\omega_{10}^2v_2^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 15\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$13\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 2\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^3v_2^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 + 4\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 -$
$8\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 + 4v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 5\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 4\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$
$16\omega_{10}^3c_s^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 8\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 4\omega_{10}^3v_2^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 4\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 8\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 2\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$26\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + \omega_{10}^3v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - \omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}^3\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 2\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 +$
$11\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 2\omega_{10}^2v_2^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}^3v_2^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} +$
$3\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^3v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 7\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 5\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 7\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$4\omega_{10}^3\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 4\omega_{10}^3v_2^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 6\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 3\omega_{10}^3v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12}^2 - \omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$8\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 3\omega_{10}^3v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - \omega_{10}^3v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$4\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^3v_2^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 4\omega_{10}^3\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 9\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 2\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^3v_2^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$4\omega_{10}^3v_2^2\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 8\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 4\omega_{10}^3\omega_5^3\omega_{15}\omega_9\omega_{12}^2 +$
$3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 - 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}$

$C_{22} = 36\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}\omega_{12} + 36\omega_{10}^3v_2^2v_1^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$12\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_{12} + 12\omega_{10}^3v_1^2c_s^2\omega_5^2\omega_{15}^2 + 84\omega_{10}^3v_2^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} +$
$12\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2 + 18\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 + 24\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{21}\omega_{12} + 6\omega_{10}^3v_1^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 +$
$78\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{12} - 36\omega_{10}^3v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 60\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} -$
$36\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^3v_2^2\omega_5\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - \omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}^3v_2^2v_1^2\omega_5^3\omega_{21}\omega_{12} +$
$12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 + 12v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2\omega_{12} - 36\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{15}\omega_{12} - 108\omega_{10}v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} +$
$6\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2\omega_{12} - 48\omega_{10}^3v_2^2c_s^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}\omega_{12} - 4\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3v_1^2c_s^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}\omega_{12} -$
$12\omega_{10}^3v_1^2\omega_5^3\omega_{21}\omega_{12} + 18\omega_{10}^3v_2^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} - 6\omega_{10}^3v_1^2c_s^2\omega_5^3\omega_{15}^2 + 12\omega_{10}^3c_s^3\omega_5^3\omega_{15}\omega_{12} - 54\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$6\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}\omega_{12} - 18\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} + 72\omega_{10}^2v_2^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3v_1^2c_s^2\omega_5^3\omega_{21}\omega_{12} - 84\omega_{10}^2v_2^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} -$
$36\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^4\omega_5^2\omega_{15}\omega_{12} + 6\omega_{10}^2c_s^3\omega_5^3\omega_{15}^2\omega_{12} - 24\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 24\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$
$12\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 108\omega_{10}^3v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 132\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 144\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 72\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$
$24\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 24\omega_{10}^3v_1^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}\omega_{12} + 36\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{15}\omega_{12} +$
$12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2 + 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2\omega_{12} -$
$12\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} -$
$18\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 42\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{12} -$
$36\omega_{10}^3v_2^2v_1^2\omega_5^2\omega_{21}\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 - 36\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{21}\omega_{12} + 12\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2 - 6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2 +$
$12\omega_{10}v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2 - 24\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 36v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}^3v_2^2v_1^2\omega_5^2\omega_{15}^2 -$
$12\omega_{10}^3v_1^2c_s^2\omega_5^2\omega_{15}^2\omega_{12} - 24\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{21}\omega_{12} - 6\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 - 36\omega_{10}^3v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} -$
$6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 36\omega_{10}^3v_2^2v_1^2\omega_5^3\omega_{15}\omega_{12} - 18\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{15}^2 + 72\omega_{10}v_2^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2 +$
$6\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2 + 12\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 18\omega_{10}v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{12} - 12\omega_{10}^3c_s^4\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} -$
$12\omega_{10}^3v_1^2c_s^2\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^3\omega_{15}\omega_{12} + 18\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2 - 12\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^4\omega_5^3\omega_{15}\omega_{12} +$
$12\omega_{10}^3v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 24\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 24\omega_{10}^2v_1^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12} - 6\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12} +$
$36\omega_{10}^3v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 18\omega_{10}^2v_2^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} - 36\omega_{10}^3v_2^2v_1^2\omega_5^2\omega_{15}^2\omega_{12} + 18\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} +$
$12\omega_{10}^2v_1^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 + 60\omega_{10}^3v_2^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 36\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{15}^2 - 72\omega_{10}^3v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^2v_1^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 18\omega_{10}^3v_2^2v_1^2\omega_5^3\omega_{15}^2 +$
$24\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^2\omega_{21}\omega_{12} + 180\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 72\omega_{10}^2v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_1^2c_s^2\omega_5^3\omega_{15}\omega_{12}$

$C_{23} = 24v_2^4\omega_5^2\omega_{15}^2 - 13\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2 - 144\omega_{10}v_2^2c_s^2\omega_5^2\omega_{15}^2 + 4\omega_{10}^3c_s^2\omega_5 + 4\omega_{10}^2c_s^4\omega_{15}^2 + 8\omega_{10}^3c_s^4\omega_5\omega_{15} + 4\omega_{10}^3v_2^4\omega_5^2 - 8\omega_{10}^2c_s^4\omega_5\omega_{15}^2 -$
$8\omega_{10}^3v_2^4\omega_{15} + 4\omega_{10}^2v_2^2\omega_5^2 + 13\omega_{10}^3v_2^2\omega_5^2\omega_{15} - 4\omega_{10}c_s^4\omega_5^2\omega_{15} + 12\omega_{10}c_s^2\omega_5^2\omega_{15}^2 + 32\omega_{10}^2v_2^4\omega_5^2\omega_{15} + 51\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15}^2 + 20\omega_{10}v_2^4\omega_5\omega_{15}^2 +$
$120\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15} - 24v_2^2\omega_5^2\omega_{15}^2 + 13\omega_{10}^2v_2^4\omega_5^2\omega_{15}^2 - 8\omega_{10}^3c_s^2\omega_{15} + 8\omega_{10}^2c_s^2\omega_5\omega_{15}^2 - 13\omega_{10}^3v_2^4\omega_5^2\omega_{15} + 4\omega_{10}c_s^2\omega_5^2\omega_{15} - 4\omega_{10}^2c_s^4\omega_5^2 +$
$4\omega_{10}^3c_s^2\omega_{15} - 12\omega_{10}c_s^4\omega_5^2\omega_{15}^2 - 8\omega_{10}^2v_2^2\omega_{15}^2 - 32\omega_{10}^2v_2^2\omega_5^2\omega_{15} - 4\omega_{10}^3c_s^2\omega_5^2 - 72\omega_{10}v_2^2c_s^2\omega_5^2\omega_{15} + 84\omega_{10}^3v_2^2c_s^2\omega_5\omega_{15} - 20\omega_{10}v_2^2\omega_5\omega_{15}^2 -$
$4\omega_{10}^3v_2^4\omega_5 - 24\omega_{10}^2v_2^2c_s^2\omega_5^2 + 8\omega_{10}^2c_s^4\omega_5^2\omega_{15} + 4\omega_{10}c_s^4\omega_5\omega_{15}^2 + 16\omega_{10}^2v_2^2\omega_5\omega_{15} + 36\omega_{10}v_2^2\omega_5^2\omega_{15}^2 - 24\omega_{10}^3v_2^2c_s^2\omega_5 - 51\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{15} -$
$20\omega_{10}^2v_2^4\omega_5\omega_{15}^2 - 48\omega_{10}^2v_2^2c_s^2\omega_5\omega_{15} - 4\omega_{10}^3c_s^4\omega_5 - 4\omega_{10}^2c_s^2\omega_{15}^2 - 20\omega_{10}v_2^4\omega_5^2\omega_{15} + 4\omega_{10}^3c_s^2\omega_5^2\omega_{15} - 4\omega_{10}^3v_2^2\omega_5^2 - 4\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 + 8c_s^4\omega_5^2\omega_{15}^2 +$
$8\omega_{10}^3v_2^2\omega_{15} + 96v_2^2c_s^2\omega_5^2\omega_{15}^2 - 4\omega_{10}^2v_2^4\omega_5^2 + 20\omega_{10}^3v_2^4\omega_5\omega_{15} + 4\omega_{10}^2c_s^2\omega_5^2 - 8\omega_{10}^2c_s^2\omega_5^2\omega_{15} - 4\omega_{10}^3c_s^4\omega_{15} - 4\omega_{10}c_s^2\omega_5\omega_{15}^2 - 84\omega_{10}^2v_2^2c_s^2\omega_5\omega_{15}^2 +$
$8\omega_{10}^2v_2^4\omega_{15}^2 - 16\omega_{10}^2v_2^4\omega_5\omega_{15} + 4\omega_{10}^3c_s^4\omega_5^2 + 4\omega_{10}^3v_2^2\omega_5 - 36\omega_{10}v_2^4\omega_5^2\omega_{15}^2 + 72\omega_{10}v_2^2c_s^2\omega_5\omega_{15}^2 + 20\omega_{10}^2v_2^2\omega_5\omega_{15}^2 + 20\omega_{10}v_2^2v_2^2\omega_5^2\omega_{15} +$
$36\omega_{10}^2v_2^2c_s^2\omega_{15}^2 - 4\omega_{10}^3c_s^4\omega_5^2\omega_{15} + 24\omega_{10}^3v_2^2c_s^2\omega_5^2 + 4\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2 - 36\omega_{10}^3v_2^2c_s^2\omega_{15} - 8c_s^2\omega_5^2\omega_{15}^2 - 20\omega_{10}^3v_2^2\omega_5\omega_{15}$

$C_{24} = -27\omega_{10}^3v_2^4\omega_5^3\omega_{15} - 12\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2 - 108\omega_{10}v_2^2c_s^2\omega_5^2\omega_{15}^2 + 102\omega_{10}^3v_2^2c_s^2\omega_5\omega_{15}^2 + 12\omega_{10}^3c_s^4\omega_5\omega_{15} - 12\omega_{10}^3v_2^4\omega_5^2 - 48\omega_{10}^3v_2^2\omega_5^2\omega_{15} +$
$19\omega_{10}^2v_2^4\omega_5^3\omega_{15}^2 - 72v_2^2\omega_5^3\omega_{15}^2 + 54\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15} + 12\omega_{10}^3v_2^4\omega_5^3 + 12\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 60\omega_{10}^2v_2^2\omega_5^3\omega_{15} - 18\omega_{10}^3v_2^4\omega_5^2\omega_{15}^2 - 36\omega_{10}v_2^2c_s^2\omega_5^3\omega_{15} +$
$12\omega_{10}^2v_2^2\omega_5^3 - 24\omega_{10}^2v_2^4\omega_5^2\omega_{15} - 4\omega_{10}^3v_2^2\omega_5^3\omega_{15}^2 - 12\omega_{10}c_s^4\omega_5^3\omega_{15}^2 + 162\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15}^2 + 6\omega_{10}^3c_s^2\omega_5\omega_{15}^2 - 12\omega_{10}^2v_2^2c_s^2\omega_5^2\omega_{15} + 27\omega_{10}^3v_2^2\omega_5^3\omega_{15} +$
$12\omega_{10}^2v_2^4\omega_5^2\omega_{15}^2 - 12\omega_{10}^3c_s^2\omega_5\omega_{15} + 48\omega_{10}^3v_2^4\omega_5^2\omega_{15} - 19\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2 + 72v_2^4\omega_5^3\omega_{15}^2 - 306\omega_{10}v_2^2c_s^2\omega_5^3\omega_{15}^2 - 12\omega_{10}c_s^4\omega_5^2\omega_{15}^2 + 60\omega_{10}^2v_2^2c_s^2\omega_5^3\omega_{15}^2 +$

$$60\omega_{10}^2v_2^4\omega_5^3\omega_{15} + 18\omega_{10}^3v_2^2\omega_5^2\omega_{15}^2 + 24\omega_{10}^2v_2^2\omega_5^2\omega_{15} + 4\omega_{10}^3v_2^4\omega_5^3\omega_{15}^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{15}^2 - 12\omega_{10}^3v_2^2c_s^2\omega_5\omega_{15} - 24\omega_{10}^3c_s^4\omega_5\omega_{15}^2 - 12\omega_{10}^3v_2^2\omega_5^3 -$$
$$90\omega_{10}v_2^4\omega_5^3\omega_{15}^2 + 12\omega_{10}^2c_s^4\omega_5^2\omega_{15} - 48\omega_{10}^3v_2^2c_s^2\omega_{15}^2 - 12\omega_{10}^3v_2^2\omega_5\omega_{15}^2 - 12\omega_{10}^2v_2^4\omega_5^3 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15} + 13\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2 + 30\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{15} -$$
$$12c_s^2\omega_5^3\omega_{15}^2 - 12\omega_{10}^2v_2^2c_s^2\omega_5^3 + 18\omega_{10}^3c_s^2\omega_5^2\omega_{15} + \omega_{10}^2c_s^4\omega_5^3\omega_{15}^2 + 12\omega_{10}^3v_2^2\omega_5^2 + 6\omega_{10}^3c_s^4\omega_5^3\omega_{15} - 6\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 + 36\omega_{10}v_2^2\omega_5^3\omega_{15} +$$
$$12\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{15}^2 + 12\omega_{10}^3c_s^4\omega_{15}^2 - 24\omega_{10}^3v_2^4\omega_5\omega_{15} + 90\omega_{10}v_2^2\omega_5^3\omega_{15}^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15} - \omega_{10}^3c_s^4\omega_5^3\omega_{15}^2 + 12\omega_{10}^3v_2^2c_s^2\omega_5^3 - 21\omega_{10}^3v_2^2c_s^2\omega_5^3\omega_{15} +$$
$$12\omega_{10}^3v_2^4\omega_5\omega_{15}^2 - 48\omega_{10}^2v_2^2c_s^2\omega_5\omega_{15}^2 - 6\omega_{10}^2c_s^4\omega_5^3\omega_{15} - 5\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2 + 252v_2^2c_s^2\omega_5^3\omega_{15}^2 + 12c_s^4\omega_5^3\omega_{15}^2 - 18\omega_{10}^3c_s^4\omega_5^2\omega_{15} - \omega_{10}^2c_s^2\omega_5^3\omega_{15}^2 -$$
$$81\omega_{10}^3v_2^2c_s^2\omega_5^2\omega_{15}^2 - 12\omega_{10}^3v_2^2c_s^2\omega_5^2 - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15} + 6\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2 - 36\omega_{10}v_2^4\omega_5^3\omega_{15} + 24\omega_{10}^3v_2^2\omega_5\omega_{15}$$

$$C_{25} = 43\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2 - 16\omega_{10}^3c_s^2\omega_5 - 16\omega_{10}^2v_2^2\omega_5^2 - 43\omega_{10}^3v_2^2\omega_5^2\omega_{15} - 16\omega_{10}^2c_s^2\omega_5\omega_{15} - 72\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 40\omega_{10}^2\omega_5^2\omega_{15} - 17\omega_{10}^2\omega_5^2\omega_{15}^2 +$$
$$80v_2^2\omega_5^2\omega_{15}^2 + 44\omega_{10}^3c_s^2\omega_5\omega_{15} - 44\omega_{10}^2c_s^2\omega_5\omega_{15}^2 - 32\omega_{10}c_s^2\omega_5^2\omega_{15} - 28\omega_{10}^3\omega_5\omega_{15} - 24\omega_{10}\omega_5\omega_{15}^2 - 20\omega_{10}^3c_s^2\omega_{15} + 28\omega_{10}^2v_2^2\omega_{15}^2 + 104\omega_{10}^2v_2^2\omega_5^2\omega_{15} +$$
$$16\omega_{10}^3c_s^2\omega_5^2 + 64\omega_{10}v_2^2\omega_5\omega_{15}^2 + 17\omega_{10}^3\omega_5^2\omega_{15} + 48\omega_{10}\omega_5^2\omega_{15}^2 + 8\omega_{10}^3\omega_5 - 48\omega_{10}^2v_2^2\omega_5\omega_{15} - 120\omega_{10}v_2^2\omega_5^2\omega_{15}^2 + 28\omega_{10}^2\omega_5\omega_{15}^2 + 20\omega_{10}^2c_s^2\omega_{15}^2 -$$
$$25\omega_{10}^3c_s^2\omega_5^2\omega_{15} + 16\omega_{10}^3v_2^2\omega_5^2 + 25\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 - 28\omega_{10}^3v_2^2\omega_{15} + 8\omega_{10}^2\omega_5^2 - 16\omega_{10}^2c_s^2\omega_5^2 + 56\omega_{10}^2c_s^2\omega_5^2\omega_{15} + 32\omega_{10}c_s^2\omega_5\omega_{15}^2 - 12\omega_{10}^2\omega_{15}^2 +$$
$$16\omega_{10}^2\omega_5\omega_{15} - 16\omega_{10}^3v_2^2\omega_5 - 8\omega_{10}^3\omega_5^2 - 32\omega_5^2\omega_{15}^2 - 68\omega_{10}^2v_2^2\omega_5\omega_{15}^2 - 64\omega_{10}v_2^2\omega_5^2\omega_{15} + 48c_s^2\omega_5^2\omega_{15}^2 + 12\omega_{10}^3\omega_{15} + 68\omega_{10}^3v_2^2\omega_5\omega_{15} + 24\omega_{10}\omega_5^2\omega_{15}$$

$$C_{26} = 12 - \omega_{10}^3 - 18\omega_{10} + 82\omega_{10}^2c_s^4 + 8\omega_{10}^2 - 156v_2^2 + 198\omega_{10}c_s^2 - 9\omega_{10}^3v_2^4 - 132c_s^2 - 5\omega_{10}^3c_s^4 + 234\omega_{10}v_2^2 + 404\omega_{10}^2v_2^2c_s^2 + 90\omega_{10}^2v_2^4 + 144c_s^4 +$$
$$6\omega_{10}^3c_s^2 - 216\omega_{10}v_2^4 - 98\omega_{10}^2v_2^2 - 1008\omega_{10}v_2^2c_s^2 - 78\omega_{10}^2c_s^2 + 672v_2^2c_s^2 - 34\omega_{10}^3v_2^2c_s^2 + 144v_2^4 - 216\omega_{10}c_s^4 + 10\omega_{10}^3v_2^2$$

$$C_{27} = 12 - \omega_{10}^3 - 18\omega_{10} + 14\omega_{10}^2c_s^4 + 8\omega_{10}^2 - 252v_2^2 + 54\omega_{10}c_s^2 - 29\omega_{10}^3v_2^4 - 36c_s^2 - \omega_{10}^3c_s^4 + 378\omega_{10}v_2^2 + 252\omega_{10}^2v_2^2c_s^2 + 310\omega_{10}^2v_2^4 + 24c_s^4 +$$
$$2\omega_{10}^3c_s^2 - 756\omega_{10}v_2^4 - 154\omega_{10}^2v_2^2 - 648\omega_{10}v_2^2c_s^2 - 22\omega_{10}^2c_s^2 + 432v_2^2c_s^2 - 18\omega_{10}^3v_2^2c_s^2 + 504v_2^2 - 36\omega_{10}c_s^4 + 14\omega_{10}^3v_2^2$$

$$C_{28} = -4\omega_{13}\omega_7v_1^2\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6 + 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 -$$
$$4\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 - 4v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6 - 12c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 +$$
$$4\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 12\omega_{13}c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}v_1^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6 +$$
$$12\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 + 4\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6 + 4\omega_{13}\omega_7v_1^2\omega_5\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_5\omega_9^2\omega_{12}^2\omega_6 +$$
$$12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6 - 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 - 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 +$$
$$4\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 -$$
$$6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 6\omega_{13}\omega_7c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$$
$$2\omega_{13}\omega_7v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 3\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 9\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 3\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 4\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 -$$
$$12\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 4\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 4\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 -$$
$$6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 4\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 + 2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 -$$
$$4\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 + 2\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 6\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 +$$
$$4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 6c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$4\omega_{13}\omega_7v_1^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 - 3\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 6\omega_{13}\omega_7c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 -$$
$$2\omega_{13}\omega_7v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}\omega_7c_s^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7v_1^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 3\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 -$$
$$9\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6 + 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2\omega_6 -$$
$$4\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 2\omega_{13}v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 6\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 -$$
$$24\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 8\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 +$$
$$4\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 + 12\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6 + 2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 -$$
$$2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6 - 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6 + 4\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 12\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6 -$$
$$12\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}v_1^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}c_s^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6 -$$
$$4\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 24\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 8\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6$$

$$C_{29} = -12\omega_{13}\omega_7v_1^2\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6 + 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 -$$
$$12\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 - 12v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6 - 4c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 +$$
$$4\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 - 12\omega_{13}v_1^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6 +$$
$$4\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 + 12\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6 + 12\omega_{13}\omega_7v_1^2\omega_5\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7c_s^2\omega_5\omega_9^2\omega_{12}^2\omega_6 +$$
$$4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6 - 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 - 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 +$$
$$12\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 -$$
$$2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 2\omega_{13}\omega_7c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$$
$$6\omega_{13}\omega_7v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 9\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 3\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 3\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 12\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 -$$
$$4\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 4\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2\omega_6 - 6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 12\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 -$$
$$2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 4\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 -$$
$$4\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 + 6\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 + 2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 +$$
$$4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 6v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$12\omega_{13}\omega_7v_1^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2\omega_6 - 3\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 2\omega_{13}\omega_7c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +$$
$$6\omega_{13}\omega_7v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7v_1^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 9\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 -$$
$$3\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6 + 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2\omega_6 -$$
$$4\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 6\omega_{13}v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 -$$
$$8\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 24\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 - 2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 +$$
$$12\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 + 4\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2\omega_6 + 2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 -$$
$$6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6 - 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2\omega_6 + 12\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2\omega_6 -$$
$$4\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 - 12\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2\omega_6 + 12\omega_{13}v_1^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}c_s^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12}\omega_6 -$$
$$12\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 8\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 24\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6$$

$$C_{30} = -2\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - \omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 5\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - \omega_7^2 c_s^2\omega_8^2\omega_5^3\omega_{12} + 2\omega_7 v_1^2\omega_8\omega_5^3\omega_{12}^2 +
\omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - 2\omega_7^2\omega_8\omega_5^2\omega_{12}^2 + 2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + \omega_7\omega_8^2\omega_5^3\omega_{12}^2 - 2\omega_7^2 v_1^2\omega_8\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} + 2\omega_7^2 c_s^2\omega_{14}\omega_5^2\omega_{12}^2 -
\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} - \omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 6\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5\omega_{12}^2 - 2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^3 + 2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{12} - \omega_7 c_s^2\omega_8^2\omega_5^3\omega_{12}^2 -
\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 + \omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + \omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_7 c_s^2\omega_{14}\omega_5^3\omega_{12}^2 + 4\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 4\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + \omega_7^2 c_s^2\omega_8^2\omega_5^3\omega_{12}^2 -
2\omega_7^2 c_s^2\omega_{14}\omega_5^3\omega_{12}^2 - 2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_7^2 v_1^2\omega_8\omega_5^2\omega_{12}^2 + \omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 7\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 2\omega_7^2\omega_8\omega_5^3\omega_{12}^2 -
2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12} - 2\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5\omega_{12} + 5\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + \omega_7^2 v_1^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - \omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 6\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 -
\omega_7^2 v_1^2\omega_8^2\omega_5^3\omega_{12} - \omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 2\omega_7 c_s^2\omega_8\omega_5^3\omega_{12}^2 - 2\omega_7^2\omega_8^2\omega_5^2\omega_{12} - \omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2\omega_7^2 c_s^2\omega_8\omega_5^3\omega_{12}^2 - \omega_7^2\omega_8^2\omega_5^3\omega_{12}^2 + 4\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 +
\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 2\omega_7^2 v_1^2\omega_8^2\omega_5^2\omega_{12}^2 - 2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7^2\omega_8^2\omega_5^3\omega_{12} + \omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^3 - 4\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_7^2 v_1^2\omega_8^2\omega_5^2\omega_{12} -
\omega_7 v_1^2\omega_8^2\omega_5^3\omega_{12}^2 - \omega_7^2 v_1^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - 11\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - 7\omega_7 c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - \omega_7 v_1^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + \omega_7^2 v_1^2\omega_8^2\omega_5^3\omega_{12}^2 - 2\omega_7\omega_8\omega_5^3\omega_{12}^2 +
2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2 - 2\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{12}^2 + 13\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 + \omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 8\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_{12}^2 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}$$

$$C_{31} = -18\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 - 54\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 + 36\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7 v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +
12\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 - 6\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +
12\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2\omega_6^2 + 36\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 - 24\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 12\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 -
24\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 -
36\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7 c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7^2 v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 -
12\omega_{13}\omega_7^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 + 18\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 54\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 36\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 -
12\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 - 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 - 12\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 - 12\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +
12\omega_{13}\omega_7 v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 36\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6^2 + 3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 24\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2\omega_6^2 -
12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2\omega_6^2 + 3\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2\omega_6^2 + \omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2 v_1^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 -
12\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 24\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 - 12\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +
30\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2 c_s^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2 v_1^2\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 -
9\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 9\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2\omega_6^2 -
24\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6^2 + 12\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^2 - 12\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 -
6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 12\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6 -
12\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 18\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 + 12\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 4\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 +
6\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 + 6\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6^2 - 18\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 -
24\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2\omega_6 + 6\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 - 12\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 42\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 -
9\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 3\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 54\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 - 12\omega_{13} c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6 +
6\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6 + 12\omega_{13}\omega_7^2 v_1^2\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}\omega_7^2 v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 -
6\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^2 - 18\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 9\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +
24\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - \omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 + 18\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 -
6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2\omega_6 - 12\omega_{13}\omega_7^2 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2 v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 +
12\omega_7^2 v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 42\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7 v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 12\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 +
6\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 6\omega_{13}\omega_7^2 v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2 + 6\omega_7 v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 + 12\omega_{13} c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2\omega_6^2 - 54\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2\omega_6^2$$

$$C_{32} = \omega_7^2\omega_5^2 + \omega_7^2\omega_8\omega_5 - \omega_7\omega_8^2\omega_5 - \omega_7^2\omega_5^3 - \omega_8^2\omega_5^2 + \omega_7^2\omega_8\omega_5^3 + 2\omega_7\omega_8^2\omega_5^2 - 2\omega_7^2\omega_8\omega_5^2 + \omega_8\omega_5^3 - \omega_7^2\omega_8^2\omega_5^2 - 2\omega_7\omega_8\omega_5^3 + \omega_7\omega_5^3 + 3\omega_7^2\omega_8^2\omega_5 - 2\omega_7^2\omega_8^2$$

$$C_{33} = -2\omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + \omega_7\omega_{14}\omega_5^3\omega_{12}^2 - 2\omega_7^2\omega_8\omega_5^2\omega_{12}^2 + \omega_7\omega_8^2\omega_5^3\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8^2\omega_{12}^2 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} +
2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 5\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 3\omega_7\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + \omega_{14}\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 +
3\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} - \omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_7^2\omega_8^2\omega_5^2\omega_{12} - \omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} - \omega_7^2\omega_8^2\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 +
2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + \omega_7^2\omega_8^2\omega_5^3\omega_{12} - 4\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + \omega_7^2\omega_{14}\omega_5^2\omega_{12}^2 - 2\omega_7\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2 - \omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}$$

$$C_{34} = -4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6 + 4\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 5\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 +
4\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - 5\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 -
4\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_6 + 4\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 4\omega_{10}^2\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 +
8\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_6 + 6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 +
4\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6 + 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 - 4\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +
4\omega_{16}\omega_{10}^2\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 8\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5^3\omega_{15}^2\omega_6 -
8\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - 4\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_5^3\omega_{15}^2\omega_6 - 10\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 +
4\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 8\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 8\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 +
4\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 -
8\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 -
4\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^3\omega_{15}^2\omega_6 + 12\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 8\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6$$

$$C_{35} = -12\omega_{10}v_2^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3 v_1^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 -
24\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12}\omega_6^2 + 24\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12}\omega_6^2 -
12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2 -
48\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7^3 v_1^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 6\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 +
6\omega_{16}\omega_{10}\omega_7^3 v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2 - 36\omega_{16}\omega_{10}\omega_7^3 v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2 +
12\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3 v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6 -
12\omega_{16}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 - 2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 10\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 -
12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12} + 24\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12}\omega_6^2 + 12v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 -
24\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6 - \omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6^2 -
6\omega_{16}\omega_{10}\omega_7^3 v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2 - 6\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6 -$$

$12\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6^2 - 24\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 + 36\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 -$
$18\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6 - 12\omega_{16}\omega_{10}v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6^2 -$
$12\omega_{10}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6 - 12\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 -$
$12\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 +$
$12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2 -$
$24\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12}\omega_6 + 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 24\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 +$
$12\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 + 24\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12}\omega_6^2 - 18\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 -$
$18\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 - 12\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6 - 12v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 -$
$12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 24\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 6\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 +$
$6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2 - 18\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6 -$
$12\omega_{16}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 48\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 +$
$12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 +$
$12\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$24\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6^2 +$
$12\omega_{10}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6 +$
$24\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2 - 24\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 - 6\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 +$
$12\omega_{16}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12}\omega_6 - 6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 +$
$12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 30\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 -$
$24\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 24\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6^2 + 18\omega_{16}\omega_{10}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 +$
$12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6 + 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_{12}\omega_6^2 -$
$6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 + 12\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6 +$
$36\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6 + 12\omega_{16}\omega_{10}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} -$
$6\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 -$
$12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6 - 24\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12}\omega_6 - 12\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2$

$C_{36} = -\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 3\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_{15} - \omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$3\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 -$
$6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}\omega_{10}^3v_2^2\omega_7\omega_8\omega_5^2\omega_{15}^2 -$
$3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 - \omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$9\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 +$
$3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15}^2 + 3\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_5^2\omega_{15}^2 + \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15} +$
$\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2 +$
$6\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - \omega_{16}\omega_{10}^3v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - \omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 +$
$\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 +$
$\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 +$
$6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}^2 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2 -$
$2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}\omega_{10}^3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2 +$
$\omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2 +$
$2\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 +$
$\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} + 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} + \omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15} -$
$\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^3\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$3\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 + 3\omega_{16}^2\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$3\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2 + \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_8\omega_5^2\omega_{15}^2 +$
$2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2$

$C_{37} = 6\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6 +$
$4\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 - 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$
$2\omega_{16}^2\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5^3\omega_{15}^2\omega_6 + 8\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6 - 4\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 -$
$2\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 + 6\omega_{16}^2\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 -$
$8\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{8}\omega_5^3\omega_{15}^2\omega_6 -$
$4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_6 - 6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 -$
$2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$
$\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 - 6\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 4\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 -$
$8\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 8\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_6 + 4\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 -$

$$2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 3\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_6 + 2\omega_{16}\omega_{10}^3\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 -$$
$$\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}\omega_6 +$$
$$\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 +$$
$$\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 + 9\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$$
$$\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 9\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$$
$$3\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}^3v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$$
$$4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6 + 12\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6 -$$
$$4\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_5^3\omega_{15}^2\omega_6 - 4\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 3\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$$
$$\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 - 3\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 -$$
$$2\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 -$$
$$9\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - \omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$$
$$2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6 - \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^3\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 3\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$$
$$2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6 - 13\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 -$$
$$2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 -$$
$$2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_8^2\omega_5^3\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{8}\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 -$$
$$4\omega_{16}^2\omega_{10}^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 15\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 +$$
$$2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}\omega_6 + 2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$$
$$2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 11\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_6 -$$
$$2\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^3\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 5\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 -$$
$$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 - 6\omega_{16}\omega_{10}^3c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 +$$
$$4\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6 - 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_8\omega_5^3\omega_{15}^2\omega_6 +$$
$$4\omega_{16}^2\omega_{10}^3c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2\omega_6 + 8\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 -$$
$$2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6 + 15\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 +$$
$$6\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 - 5\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6 + 11\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 3\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2\omega_6$$

$$C_{38} = -3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15} - \omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_{15} - 3\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 3\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 -$$
$$2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_8\omega_5^2\omega_{15}^2 -$$
$$\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 - 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$3\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - 3\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_5^2\omega_{15}^2 -$$
$$\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 3\omega_{16}\omega_{10}^3v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 +$$
$$\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$$
$$\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 3\omega_{16}\omega_{10}^3v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 +$$
$$\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$$
$$\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2 + 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_8\omega_5^2\omega_{15}^2 +$$
$$2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2$$

$$C_{39} = -\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8^2\omega_5\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6 +$$
$$4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 11\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 15\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 -$$
$$2\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - \omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_8^2\omega_5\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6 +$$
$$4\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 -$$
$$2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5\omega_{15}^2\omega_6 - 4\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 -$$
$$4\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 8\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 +$$
$$2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_6 + 2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6 +$$
$$\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - 4\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - 4\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6 -$$
$$2\omega_{16}\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 8\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6 +$$
$$2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6 + 4\omega_{16}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6 -$$
$$2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_6 + 4\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 9\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 -$$

$2\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 +$
$2\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^3\omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8\omega_{15}^2\omega_6 - 3\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 -$
$2\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 9\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 +$
$2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15}\omega_6 - 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 +$
$\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 + \omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2\omega_6 -$
$2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 9\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 +$
$2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_6 - 2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8\omega_5\omega_{15}^2\omega_6 - 4\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 +$
$2\omega_{16}\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 3\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 +$
$3\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 3\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 +$
$\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_{15}^2\omega_6 - 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_6 -$
$\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 12\omega_{16}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$13\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_6 +$
$2\omega_{16}\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 +$
$8\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 8\omega_{16}^2\omega_{10}^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_6 + 2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5^2\omega_{15}^2\omega_6 -$
$4\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 4\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 +$
$2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 3\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 +$
$6\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 + 5\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2\omega_6 -$
$\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8^2\omega_5\omega_{15}^2\omega_6 + 8\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}^2\omega_6 +$
$2\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5\omega_{15}\omega_6 - 3\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 6\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 11\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2\omega_6 -$
$5\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 15\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6 + 2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2\omega_6 - 2\omega_{10}^2\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2\omega_6$

$C_{40} =$
$96\omega_{16}^2v_2^2\omega_7^2c_s^2 + 120\omega_{16}\omega_{10}^2v_2^2\omega_7^2c_s^2 - 13\omega_{16}\omega_{10}^3v_2^4\omega_7^2 - 4\omega_{10}^2\omega_7^2c_s^4 - 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 8\omega_{16}\omega_{10}^3v_2^4 - 32\omega_{16}\omega_{10}^2v_2^2\omega_7^2 - 24\omega_{16}^2v_2^2\omega_7^2 - 12\omega_{16}^2\omega_{10}\omega_7^2c_s^4 -$
$24\omega_{10}^3v_2^2\omega_7c_s^2 + 8\omega_{16}\omega_{10}^3\omega_7c_s^4 - 4\omega_{16}^2\omega_{10}^2c_s^2 + 4\omega_{16}\omega_{10}^3\omega_7^2c_s^2 + 13\omega_{16}^2\omega_{10}^2v_2^4\omega_7^2 - 4\omega_{16}^2\omega_{10}\omega_7c_s^2 + 51\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2c_s^2 - 8\omega_{16}^2\omega_{10}^2\omega_7c_s^4 - 20\omega_{16}^2\omega_{10}v_2^2\omega_7 -$
$4\omega_{10}^3v_2^4\omega_7 + 36\omega_{16}^2\omega_{10}v_2^2\omega_7^2 - 8\omega_{16}^2\omega_{10}^2v_2^2 + 4\omega_{10}^3v_2^4\omega_7^2 + 72\omega_{16}^2\omega_{10}v_2^2\omega_7c_s^2 + 8\omega_{16}\omega_{10}^2\omega_7^2c_s^4 + 8\omega_{16}^2\omega_7^2c_s^4 + 4\omega_{16}\omega_{10}\omega_7^2c_s^2 - 4\omega_{10}^3\omega_7c_s^4 + 4\omega_{10}^2v_2^2\omega_7^2 -$
$20\omega_{16}^2\omega_{10}^2v_2^4\omega_7 - 4\omega_{10}^3\omega_7^2c_s^2 - 4\omega_{16}\omega_{10}^3c_s^4 + 16\omega_{16}\omega_{10}^2v_2^2\omega_7 - 51\omega_{16}\omega_{10}^3v_2^2\omega_7^2c_s^2 + 20\omega_{16}\omega_{10}^3v_2^4\omega_7 - 20\omega_{16}\omega_{10}v_2^4\omega_7^2 - 4\omega_{16}\omega_{10}\omega_7^2c_s^4 + 4\omega_{10}^3\omega_7c_s^2 +$
$84\omega_{16}\omega_{10}^3v_2^2\omega_7c_s^2 - 13\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2 - 36\omega_{16}\omega_{10}^3v_2^2c_s^2 + 20\omega_{16}^2\omega_{10}v_2^4\omega_7 - 24\omega_{10}^2v_2^2\omega_7^2c_s^2 + 8\omega_{16}^2\omega_{10}^2v_2^4 + 4\omega_{10}^3v_2^2\omega_7 - 72\omega_{16}\omega_{10}v_2^2\omega_7^2c_s^2 - 8\omega_{16}^2\omega_7^2c_s^2 -$
$8\omega_{16}\omega_{10}^2\omega_7^2c_s^2 + 13\omega_{16}\omega_{10}^3v_2^2\omega_7^2 - 144\omega_{16}^2\omega_{10}v_2^2\omega_7^2c_s^2 + 4\omega_{16}\omega_{10}^3c_s^2 + 4\omega_{10}^3\omega_7^2c_s^4 + 32\omega_{16}\omega_{10}^2v_2^4\omega_7^2 + 24\omega_{16}^2v_2^4\omega_7^2 + 36\omega_{16}^2\omega_{10}v_2^2c_s^2 - 16\omega_{16}\omega_{10}^2v_2^4\omega_7 +$
$12\omega_{16}^2\omega_{10}\omega_7^2c_s^2 - 8\omega_{16}\omega_{10}^3\omega_7c_s^2 - 20\omega_{16}\omega_{10}^3v_2^2\omega_7 + 4\omega_{10}^2\omega_7^2c_s^2 - 84\omega_{16}^2\omega_{10}^2v_2^2\omega_7c_s^2 + 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4 + 20\omega_{16}\omega_{10}v_2^2\omega_7^2 + 8\omega_{16}\omega_{10}^3v_2^2 - 36\omega_{16}^2\omega_{10}v_2^4\omega_7^2 +$
$8\omega_{16}^2\omega_{10}^2\omega_7c_s^2 - 48\omega_{16}\omega_{10}^2v_2^2\omega_7c_s^2 - 4\omega_{10}^3v_2^2\omega_7^2 + 4\omega_{16}^2\omega_{10}^2c_s^4 - 4\omega_{16}\omega_{10}^3\omega_7^2c_s^4 + 24\omega_{10}^3v_2^2\omega_7^2c_s^2 + 4\omega_{16}^2\omega_{10}\omega_7c_s^4 + 20\omega_{16}^2\omega_{10}^2v_2^2\omega_7 - 4\omega_{10}^2v_2^4\omega_7^2$

$C_{41} = 25\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 17\omega_{16}^2\omega_{10}^2\omega_7^2 + 104\omega_{16}\omega_{10}^2v_2^2\omega_7^2 + 80\omega_{16}^2v_2^2\omega_7^2 + 20\omega_{16}^2\omega_{10}^2c_s^2 - 25\omega_{16}\omega_{10}^3\omega_7^2c_s^2 + 32\omega_{16}^2\omega_{10}\omega_7c_s^2 + 64\omega_{16}^2\omega_{10}v_2^2\omega_7 +$
$24\omega_{16}\omega_{10}\omega_7^2 - 120\omega_{16}^2\omega_{10}v_2^2\omega_7^2 + 28\omega_{16}^2\omega_{10}^2v_2^2 + 12\omega_{16}\omega_{10}^3 - 32\omega_{16}\omega_{10}\omega_7^2c_s^2 - 16\omega_{10}^2v_2^2\omega_7^2 + 16\omega_{10}^3\omega_7^2c_s^2 - 48\omega_{16}\omega_{10}^2v_2^2\omega_7 + 28\omega_{16}^2\omega_{10}^2\omega_7 -$
$16\omega_{16}^2\omega_{10}\omega_7c_s^2 - 24\omega_{16}^2\omega_{10}\omega_7 + 17\omega_{16}\omega_{10}^3\omega_7^2 - 12\omega_{16}^2\omega_{10}^2 - 16\omega_{10}^3\omega_7c_s^2 + 43\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2 - 16\omega_{10}^3v_2^2\omega_7 + 48\omega_{16}^2\omega_7^2c_s^2 + 56\omega_{16}\omega_{10}^2\omega_7^2c_s^2 -$
$43\omega_{16}\omega_{10}^3v_2^2\omega_7^2 - 8\omega_{10}^3\omega_7^2 + 16\omega_{16}\omega_{10}^2\omega_7 - 20\omega_{16}\omega_{10}^3c_s^2 - 72\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 44\omega_{16}\omega_{10}^3\omega_7c_s^2 + 68\omega_{16}\omega_{10}^3v_2^2\omega_7 - 16\omega_{10}^2\omega_7^2c_s^2 + 8\omega_{10}^3\omega_7 -$
$40\omega_{16}\omega_{10}^2\omega_7^2 - 32\omega_{16}^2\omega_7^2 - 64\omega_{16}\omega_{10}v_2^2\omega_7^2 - 28\omega_{16}\omega_{10}^3v_2^2 - 44\omega_{16}^2\omega_{10}^2\omega_7c_s^2 + 16\omega_{10}^3v_2^2\omega_7^2 - 28\omega_{16}\omega_{10}^3\omega_7 + 48\omega_{16}^2\omega_{10}\omega_7^2 + 8\omega_{10}^2\omega_7^2 - 68\omega_{16}^2\omega_{10}^2v_2^2\omega_7$

$C_{42} = 19\omega_{16}^2\omega_{10}^2v_2^4\omega_7^3 - 12\omega_{16}\omega_{10}^2v_2^2\omega_7^2c_s^2 + 48\omega_{16}\omega_{10}^3v_2^4\omega_7^2 + 12\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3c_s^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 48\omega_{16}^2\omega_{10}^3v_2^2c_s^2 + 12\omega_{16}^2\omega_7^3c_s^4 -$
$6\omega_{16}\omega_{10}^2\omega_7^3c_s^4 - 4\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3 + 24\omega_{16}\omega_{10}^2v_2^2\omega_7^2 - 12\omega_{16}^2\omega_{10}\omega_7^2c_s^4 + 12\omega_{16}^3\omega_{10}^3\omega_7c_s^4 + 18\omega_{16}\omega_{10}^3\omega_7^2c_s^2 + 12\omega_{16}^2\omega_{10}^2v_2^4\omega_7^2 - 27\omega_{16}\omega_{10}^3v_2^4\omega_7^3 +$
$162\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2c_s^2 - 21\omega_{16}\omega_{10}^3v_2^2\omega_7^3c_s^2 + 18\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2 - 72\omega_{16}^2v_2^2\omega_7^3 - 60\omega_{16}\omega_{10}^2v_2^2\omega_7^3 - \omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 - 12\omega_{16}^2\omega_{10}\omega_7^3c_s^4 - 12\omega_{10}^3v_2^4\omega_7^2 -$
$12\omega_{16}^2\omega_{10}^3v_2^2\omega_7 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^4 - 36\omega_{16}\omega_{10}v_2^4\omega_7^3 + 6\omega_{16}^2\omega_{10}^3\omega_7c_s^2 + 54\omega_{16}\omega_{10}^2v_2^2\omega_7^3c_s^2 + 252\omega_{16}^2v_2^3\omega_7^2c_s^2 - \omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 - 81\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2c_s^2 +$
$13\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 + 12\omega_{10}^3v_2^4\omega_7^3 + 60\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2 + 30\omega_{16}\omega_{10}^3v_2^2\omega_7^2c_s^2 + 90\omega_{16}\omega_{10}v_2^2\omega_7^3 + 12\omega_{10}^2v_2^2\omega_7^3 - 24\omega_{16}\omega_{10}^3v_2^4\omega_7 - 6\omega_{16}\omega_{10}^3\omega_7^3c_s^2 -$
$24\omega_{16}^2\omega_{10}^3\omega_7c_s^4 - 12\omega_{16}\omega_{10}^3v_2^2\omega_7c_s^2 + 27\omega_{16}\omega_{10}^3v_2^2\omega_7^3 + \omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2 + 12\omega_{16}^2\omega_{10}\omega_7^3c_s^2 + 72\omega_{16}^2v_2^4\omega_7^3 + 60\omega_{16}\omega_{10}^2v_2^4\omega_7^3 -$
$18\omega_{16}^2\omega_{10}^3v_2^4\omega_7^2 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2 + 12\omega_{10}^3v_2^2\omega_7^2c_s^2 - 48\omega_{16}\omega_{10}^3v_2^2\omega_7^2 + 6\omega_{16}\omega_{10}^3\omega_7^3c_s^4 - 19\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3 - 108\omega_{16}^2\omega_{10}v_2^2\omega_7^2c_s^2 + 12\omega_{16}^2\omega_{10}^3c_s^4 -$
$5\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 24\omega_{16}\omega_{10}^2v_2^4\omega_7^2 + 4\omega_{16}^2\omega_{10}^3v_2^4\omega_7^3 + 102\omega_{16}^2\omega_{10}^3v_2^2\omega_7c_s^2 - 36\omega_{16}\omega_{10}v_2^2\omega_7^3c_s^2 + 6\omega_{16}\omega_{10}^2\omega_7^3c_s^2 - 12\omega_{16}^2\omega_7^3c_s^2 - 12\omega_{10}^3v_2^2\omega_7^3 +$
$12\omega_{16}^2\omega_{10}\omega_7^2c_s^2 - 12\omega_{10}^2v_2^2\omega_7^3c_s^2 - 90\omega_{16}^2\omega_{10}v_2^4\omega_7^3 - 12\omega_{16}\omega_{10}^3\omega_7c_s^2 - 12\omega_{10}^2v_2^4\omega_7^3 + 24\omega_{16}\omega_{10}^3v_2^2\omega_7 - 48\omega_{16}^2\omega_{10}^2v_2^2\omega_7c_s^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4 +$
$12\omega_{16}^2\omega_{10}^3v_2^4\omega_7 + 12\omega_{10}^3v_2^2\omega_7^2 - 306\omega_{16}^2\omega_{10}v_2^2\omega_7^3c_s^2 + 36\omega_{16}\omega_{10}v_2^2\omega_7^3 - 18\omega_{16}\omega_{10}^3\omega_7^2c_s^4 - 12\omega_{10}^3v_2^2\omega_7^2c_s^2$

$C_{43} = -12v_2v_3^2\omega_7v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 6v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2\omega_7^2v_1^2c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} -$
$24v_2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6\omega_{19} - 12v_2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 48v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6\omega_{19} - 12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} +$
$3v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_2\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 12v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_6^2\omega_{19} - 6v_2^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} -$
$12v_2^2v_3^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 - 24v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_{12}\omega_6\omega_{19} - 12v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} - 6v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{19} +$
$12v_2\omega_7v_1^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{19} - 3v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} -$
$3v_2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 24v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_{19} + 12v_2^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 6v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} +$
$12v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 3v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_2\omega_7v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} +$
$12v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_2\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} - 6v_2\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 +$
$6v_2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 6v_2v_3^2\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 3v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} +$
$6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 3v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 - 12v_2^2\omega_7v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 -$
$3v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} + 12v_3^2\omega_7^2v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} +$
$24v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 3v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 12v_2^2\omega_7v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{19} +$
$6v_2^2v_3^2\omega_7v_1\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2v_3^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 12v_2v_3^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 24v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_5\omega_{12}\omega_6^2\omega_{19} +$

$12v_2v_3^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} + 6v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2v_3^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} + 6v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} +$
$12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} + 12v_2^2\omega_7^2v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_3^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 3v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} +$
$12v_3^2\omega_7v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2v_3^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2v_3^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 24v_2\omega_7c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{12}\omega_6^2\omega_{19} +$
$6v_3^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} + 12v_2^2v_3^2\omega_7^2v_1\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2^2v_3^2\omega_7v_1\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} -$
$48v_2\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_3^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 24v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_{12}\omega_6^2\omega_{19} - 6v_2v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} -$
$12v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} - 6v_2^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_2v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} -$
$12v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_3^2\omega_7v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2v_3^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} +$
$3v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 3v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 - 12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} - 6v_2^2v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} +$
$6v_2^2v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 - 6v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 6v_2^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} -$
$12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} - 6v_3^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2^2\omega_7v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 2v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} -$
$12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5\omega_6^2\omega_{19} - 24v_2\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} + 12v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 6v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} +$
$6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{19} - 12v_2\omega_7v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} + 6v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} +$
$3v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{19} + 12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} + 6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{19} -$
$6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} - 6v_2v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 - 6v_2v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 - 12v_2\omega_7^2v_1^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} -$
$12v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} - 28v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6\omega_{19} - 6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} + 12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} +$
$12v_2\omega_7v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 6v_2\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} + 48v_2\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6\omega_{19} -$
$3v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 12v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} - 6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} -$
$12v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} + 12v_2\omega_7v_1^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5\omega_6^2\omega_{19} + 12v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_6^2\omega_{19} -$
$6v_2v_3^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_3^2\omega_7v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_2v_3^2\omega_7v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2^2v_3^2\omega_7^2v_1\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} -$
$6v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_3^2\omega_7v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 - 12v_2^2v_3^2\omega_7v_1\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 24v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{12}\omega_6^2\omega_{19} -$
$12v_2^2\omega_7^2v_1c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} - 6v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} - 12v_2v_3^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} -$
$12v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} - 12v_2v_3^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 6v_3^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 3v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} +$
$3v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 48v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} - 12v_2^2\omega_7v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 6v_2^2v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 +$
$6v_2^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 24v_2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_3^2\omega_7^2v_1c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} -$
$6v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 6v_2^2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 6v_2^2\omega_7v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} -$
$3v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 6v_2\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 24v_2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} + 6v_3^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} +$
$12v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2v_3^2\omega_7c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_6^2\omega_{19} + 12v_2v_3^2\omega_7v_1^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} +$
$6v_3^2\omega_7v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 3v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 6v_2^2v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} + 12v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_6^2\omega_{19} +$
$12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_6^2\omega_{19} - 3v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 12v_2^2v_3^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} - 6v_2v_3^2\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 -$
$6v_2v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 12v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} + 6v_2v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 6v_2^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} +$
$12v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 12v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_{12}\omega_6^2\omega_{19} + 6v_2v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19}$

$C_{44} = -2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{19} + 4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$8v_2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 2v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_6^2\omega_{19} - 4v_2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 +$
$8v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$4v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_6^2\omega_{19} + 2v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 4v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2^2\omega_{13}v_3^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 +$
$8v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_{19} - 2v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2^2\omega_{13}v_3^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$2v_2^2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} + 6v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$4v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 8v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - 2v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_6^2\omega_{19} + 4v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 2v_2^2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$4v_2^2\omega_{13}v_3^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 -$
$8v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19} +$
$v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6\omega_{19} - 8v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$4v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6\omega_{19} - 8v_2\omega_{13}v_3^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} + 8v_2\omega_{13}\omega_7v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$2v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - \omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19} + 4v_2^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$2v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2^2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - 2v_2^2\omega_{13}v_3^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$4v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$8v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} + 8v_2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6\omega_{19} + 8v_2\omega_{13}\omega_7v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 4v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$2v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_6^2\omega_{19} + 8v_2\omega_{13}\omega_7v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$8v_2\omega_{13}v_3^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - 6v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6\omega_{19} -$
$8v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_{19} - 4v_2^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 8v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 8v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6\omega_{19} -$
$4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 4v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$4v_2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6\omega_{19} - 16v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$2v_2^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2v_2^2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 8v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 4v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 2v_2^2\omega_{13}v_3^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2^2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$4v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - 8v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 8v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$4v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19} + 4v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} + 2v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19} +$
$4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6\omega_{19} + 4\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - \omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 2v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19} - 8v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19} - 8v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_{19} + 4\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} -$

$v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19} + 4\omega_{13}v_3^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$8v_2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_6^2\omega_{19} + 2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 -$
$4\omega_{13}v_3^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 4v_2\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$4\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$2v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2^2\omega_{13}v_3^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_6^2\omega_{19} -$
$8v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6\omega_{19} - 2v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$4v_2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + \omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 2v_2^2\omega_{13}v_3^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 -$
$v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19} + 2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 8v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$8v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6\omega_{19} + 4v_2^2\omega_{13}v_3^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$4v_2\omega_{13}v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6\omega_{19} + 4\omega_{13}v_3^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6\omega_{19} + 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 2v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_6^2\omega_{19} -$
$2v_2^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 8v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_9\omega_6^2\omega_{19} -$
$4v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} - 4v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_6^2\omega_{19} - 20v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$8v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6\omega_{19} + 2v_2^2\omega_{13}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} -$
$4\omega_{13}v_3^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - 2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2\omega_{19} - 4\omega_{13}v_3^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} +$
$8v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_6\omega_{19} - 4v_2^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 8v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6\omega_{19} +$
$8v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 4\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{19} + 8v_2\omega_{13}v_3^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2$

$C_{45} = 4v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19} - 2v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 2\omega_7^3v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 6v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_{19} + 4v_3^2\omega_7^3v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} +$
$4v_3^2\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 4\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} - 8v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} - 4\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} - 4\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} +$
$8v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} - 4v_2v_3^2\omega_7^3v_1\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 4v_2\omega_7^3v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} - 4v_3^2\omega_7^3c_s^2\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} -$
$4v_3^2\omega_7^3v_1^2\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} + 4\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_{19} - 4\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 4v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{12}\omega_{19} - 4v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} +$
$4v_3^2\omega_7^3v_1^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} - 4v_2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 4v_2\omega_7^2v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 4v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} -$
$2\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 4v_2v_3^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19} - 4\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12} + v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19} -$
$2v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4v_2v_3^2\omega_7^3v_1\omega_{20}\omega_8^2\omega_5^3\omega_{19} - 2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_7^3c_s^4\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} +$
$4v_2\omega_7^3v_1c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19} - 4v_3^2\omega_7^3v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_{19} + \omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19} - 4v_3^2\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_{19} +$
$4v_3^2\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 8v_2\omega_7^3v_1c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 4\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_5^2\omega_{12}\omega_{19} - 8v_2v_3^2\omega_7^3v_1\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} - 4v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} -$
$16v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 4\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 8\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} + 8v_2\omega_7^3v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_{19} +$
$4\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 4v_2v_3^2\omega_7^3v_1\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + \omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{19} - 4v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} -$
$\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 4v_3^2\omega_7^3v_1^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} - 12\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} + 2\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} - 4v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} -$
$12v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} - 2v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{19} - 2v_3^2\omega_7^3v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{19} + 4\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{12}\omega_{19} - 4\omega_7^3v_1^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} -$
$8v_2v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5^3\omega_{12} + v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19} - 8v_2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$4\omega_7^2c_s^4\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} - 2\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_{19} + 4\omega_7^3c_s^4\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 4\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} - 2v_3^2\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} -$
$16\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} - 8v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} - 8v_2v_3^2\omega_7^3v_1\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 2\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19} -$
$8v_2v_3^2\omega_7^3v_1\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_{19} - 2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19} - 12\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 8v_2\omega_7^3v_1c_s^2\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} + 4\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 4\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} + 4v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19} - 2v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19} +$
$4v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} + 2v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} +$
$2v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4v_2v_3^2\omega_7^3v_1\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} -$
$4v_2\omega_7^3v_1c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 2\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19} +$
$8v_3^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 4v_3^2\omega_7^3v_1^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_{19} + 4v_3^2\omega_7^3c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_{19} + 8\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19} + 4\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19} -$
$8v_2\omega_7^3v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 8v_2\omega_7^2v_1c_s^2\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} - 8v_2v_3^2\omega_7^2v_1\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} + 8v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} +$
$4v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19} - 4v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 4v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{12}\omega_{19} + 8v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} -$
$4\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 8v_2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{19} + 2v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} +$
$2\omega_7^3v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 2v_3^2\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 8v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} + 8\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} - 4\omega_7^3c_s^4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} +$
$6\omega_7v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 4v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_{19} + 4\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} + 8v_2v_3^2\omega_7^3v_1\omega_{20}\omega_8\omega_5^3\omega_{12}\omega_{19} +$
$4\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} - 8v_2\omega_7^3v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_{19} - 8v_2v_3^2\omega_7^2v_1\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 4\omega_7^3v_1^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19} -$
$8v_2\omega_7^2v_1c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 4v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} + 8v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{19} - 2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19} + 4v_2\omega_7^3v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{19} -$
$2v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{19} + 4v_2v_3^2\omega_7^3v_1\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2v_3^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19} - 2v_3^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 4v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$4v_2\omega_7^3v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 8v_2v_3^2\omega_7^3v_1\omega_{20}\omega_8^2\omega_5^2\omega_{12}\omega_{19} + 4v_2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} +$
$4v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^3\omega_{12}\omega_{19} - 2\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 2\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_{19} + 2v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}\omega_{19} + 4v_3^2\omega_7^3v_1^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}$

$C_{46} = -v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$
$4v_2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$
$4\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 2v_2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19} - 2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$
$2v_2^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 - 4v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$
$2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 4v_2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$
$4\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 2v_2^2\omega_7v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$
$\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 3v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 2v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$
$4\omega_7v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_{12}\omega_6\omega_{19} + 2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$
$2v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19} + v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$

$$4v_2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19} + 4v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$$
$$4v_2^2\omega_7v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_{19} + 4v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6\omega_{19} -$$
$$2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$$
$$2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 4v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} + v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$$
$$4v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 2v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 8v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$$
$$6v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19} + 4\omega_7v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 +$$
$$v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 4v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} +$$
$$4v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6\omega_{19} + 6v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$$
$$\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 - 2v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_7v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 - 4\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} -$$
$$v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 + 4\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$$
$$4v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 2v_2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4v_2^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$$
$$2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_{19} -$$
$$2v_2^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6\omega_{19} +$$
$$4\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19} - 2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6 +$$
$$2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 - 4v_2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19} + 2v_2^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 - 4\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$$
$$2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 2v_2\omega_7v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} -$$
$$2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 2v_2\omega_7v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$$
$$4v_2^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4v_2^2\omega_7v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2^2\omega_7v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 -$$
$$2v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 + 4v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2\omega_7v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 +$$
$$4v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{19} + 2v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$$
$$4\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$$
$$2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 - 2v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 2v_2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6 -$$
$$\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 4\omega_7v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 + 2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$$
$$2v_2^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_{19} +$$
$$4v_2\omega_7v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6\omega_{19} + 2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$$
$$4v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6\omega_{19} - 10v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$$
$$4v_2^2\omega_7v_1\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 4v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} - 2v_2^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$$
$$2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 + 4v_2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2\omega_{19} + 2v_2^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$$
$$v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2 + 2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 2v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6^2\omega_{19} -$$
$$3v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6\omega_{19} - 2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 4v_2^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} +$$
$$2v_2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 2v_2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19} + 2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12}\omega_6^2\omega_{19}$$

$$C_{47} = -2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$$
$$2\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19} +$$
$$2\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} - 2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$$
$$4\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_{19} + \omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} -$$
$$2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} - \omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$$
$$2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} - \omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$4\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} +$$
$$2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} -$$
$$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$$
$$2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19} + 2\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$\omega_{16}v_2^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$$
$$4\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19} -$$
$$2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19} + 2\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$$
$$2\omega_{10}v_3\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19} - 2\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$$
$$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$$
$$\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} -$$
$$\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2v_2^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} +$$
$$2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} +$$
$$2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 8\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$$
$$2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19} + 2\omega_{10}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$$
$$\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19} + 2\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 4\omega_{16}\omega_{10}\omega_7\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} +$$
$$2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} -$$
$$2\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2v_3^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$$
$$2v_2^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{10}v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$$
$$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$$
$$\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_2^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$$
$$2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{10}v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} +$$
$$2\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_3^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$$
$$2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + 2\omega_{10}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 4\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8\omega_{15}\omega_{19} +$$

$\omega_{16}\omega_{10}v_3^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} - 8\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$\omega_{16}v_3^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19} -$
$\omega_{16}v_3^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 4\omega_{16}\omega_{10}\omega_7\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 2\omega_{10}v_2^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{16}v_2^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{10}v_2^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19} -$
$2\omega_{16}\omega_{10}v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19} -$
$\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} + \omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} +$
$\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19} -$
$\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19} -$
$\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_2^2v_3^3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} +$
$2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} + 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 2\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19} +$
$2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} - 2\omega_{10}v_2^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{19} + \omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} +$
$2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$\omega_{16}\omega_{10}v_3\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} + 2v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2\omega_{10}v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$12\omega_{16}\omega_{10}\omega_7\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19} - 2\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2v_2^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2v_2^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_3\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19} -$
$2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{10}v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2\omega_{10}v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} + \omega_{16}v_3\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} +$
$2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} -$
$\omega_{16}\omega_{10}v_2^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19} -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19} + 2\omega_{10}v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3^3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} +$
$4\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{16}\omega_{10}v_2^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$8\omega_{16}\omega_{10}\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 4\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_5\omega_{15}\omega_{19} -$
$\omega_{16}\omega_{10}v_2^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} -$
$\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} + \omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2v_2^2v_3\omega_7^3v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5\omega_{19} +$
$2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} -$
$2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} -$
$8\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2\omega_{10}v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + \omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} + \omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 2\omega_{10}v_3^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} -$
$\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19} -$
$2\omega_{16}\omega_{10}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19} - 2v_3\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19} +$
$2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}v_2^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} - 2\omega_{10}v_2^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 4\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$\omega_{16}v_2^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} -$
$2\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19} + \omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} - 2\omega_{16}\omega_{10}v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}$

$C_{48} = 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{19} + 24v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$36\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 24v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{10}v_2^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$

$24\omega_{10}v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} - 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{19} - 12\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19} - 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$36\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} + 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{19} + 12\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 +$
$12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 12v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} +$
$24\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19} + 12\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19} - 12\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} +$
$24\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 24v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$24\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 -$
$12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 24\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6\omega_{19} - 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19} - 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 12\omega_{10}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 18\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} - 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 +$
$12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} + 6\omega_{16}\omega_{10}v_2^3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 -$
$12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} - 12\omega_{10}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} + 12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$24\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 +$
$24\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19} +$
$24\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 10\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} -$
$12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$24\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19} -$
$6\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 24\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$24\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$18\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6\omega_{19} -$
$24\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} -$
$24\omega_{16}\omega_{10}v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19} + 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 +$
$12\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 24\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$18\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} + 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 24\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} + 12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_{10}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} + 6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19} + 12\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 +$
$12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6^2\omega_{19} + 24\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} +$
$12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 12\omega_{10}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 -$
$24\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}\omega_{10}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19} +$
$24\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_{10}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} - 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} +$
$24\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 24\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} - 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$24\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 +$
$12\omega_{10}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}\omega_{10}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19} +$
$24\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} -$
$6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - \omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 6\omega_{16}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} - 12\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{10}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$24\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 -$
$12\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} +$
$24\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{15}\omega_6^2\omega_{19} + 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{19} + 24\omega_{16}\omega_{10}v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$

$24\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 -$
$6\omega_{16}\omega_{10}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 + 42\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$24\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} + 24\omega_{10}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} + 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_6\omega_{19} +$
$24\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$24\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$24\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19} -$
$60\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 24v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 24v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 24\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$24\omega_{10}v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{10}v_2^2v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12v_2^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 60\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 24\omega_{16}\omega_{10}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$48\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} -$
$24\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 -$
$12\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{15}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} - 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6\omega_{19} - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2\omega_{19} +$
$24\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 - 24\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} +$
$12\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12v_3^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_6^2 -$
$36\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{19} + 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2\omega_{19}$

$C_{49} = 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} - 4\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} +$
$12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} +$
$2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 +$
$2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6\omega_{19} +$
$6\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 8\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 +$
$4\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}\omega_{10}^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} +$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19} +$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}\omega_{10}v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}\omega_{10}v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$2\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} -$
$4\omega_{16}\omega_{10}^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$4\omega_{16}\omega_{10}^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_6\omega_{19} -$
$4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 8\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} +$
$2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19} + 4\omega_{16}\omega_{10}\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} +$
$2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19} - 2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$2\omega_{16}^2\omega_{10}v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6\omega_{19} +$
$4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$12\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} + 9\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} +$

$4\omega_{16}\omega_{10}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}\omega_{10}v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}\omega_{10}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}\omega_{10}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{15}\omega_6\omega_{19} -$
$2\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5\omega_6\omega_{19} + 8\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} +$
$4\omega_{16}\omega_{10}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{10}\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 14\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} -$
$2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} - 4\omega_{16}\omega_{10}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$4\omega_{16}\omega_{10}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$2\omega_{16}^2\omega_{10}^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$2\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 +$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 +$
$2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 8\omega_{16}^2\omega_{10}^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} - 4\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}^2\omega_{10}v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5\omega_6\omega_{19} -$
$2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 8\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}\omega_{10}^2\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}\omega_{10}^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} -$
$12\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 2\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6\omega_{19} + 4\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}\omega_{10}^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{10}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$4\omega_{16}\omega_{10}^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}\omega_{10}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} -$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19} - 4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 -$
$4\omega_{16}^2\omega_{10}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}$

$C_{50} = -\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2\omega_{16}\omega_{10}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 6\omega_{16}\omega_{10}v_3\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 +$
$4v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{10}v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_5\omega_{15}\omega_{19}^2 -$
$4\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 4\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$4\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 - \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 - \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 + 4v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}^2 -$
$2\omega_{10}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + \omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 + \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}^2 +$
$\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}^2 + \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - 4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 +$
$4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 + 2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{10}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$6\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 - \omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 - 2\omega_{16}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 - 6\omega_{16}\omega_{10}v_3\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 - 12\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}^2 - 2\omega_{10}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{10}v_2^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$4\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 - \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$8\omega_{16}\omega_{10}v_3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + \omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 - 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 -$
$2v_2^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$\omega_{16}\omega_{10}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 - 2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 + 4\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19} +$

$\omega_{16}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 + 4v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 +$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 + 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 - 4v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$4\omega_{10}v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 + 4\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 +$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 10\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{10}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{10}v_2^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{10}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - 4\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 - 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}^2 +$
$4\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5\omega_{19}^2 - 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 + \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 +$
$\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 - 4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + \omega_{16}\omega_{10}v_2^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$\omega_{16}\omega_{10}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 12\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 4\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$4\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{10}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{16}\omega_{10}v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 4v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{10}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 - 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$\omega_{16}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + \omega_{16}v_2^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 -$
$\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 - \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 + 2\omega_{16}\omega_{10}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + \omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - \omega_{16}\omega_{10}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - \omega_{16}\omega_{10}v_2^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$2\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + \omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 - 4\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 +$
$\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 + 2\omega_{10}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 4\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_{19}^2 + \omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{19}^2 + \omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} +$
$4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 -$
$4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 - \omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 -$
$\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 +$
$4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}^2 -$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19}^2 - 8\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} -$
$2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} - 2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}^2 -$
$\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_{19}^2 + 2\omega_{10}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 - 2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{15}\omega_{19}^2 +$
$4\omega_{16}\omega_{10}v_2^2v_3\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{19} + 4\omega_{16}\omega_{10}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_8\omega_5\omega_{15}\omega_{19}^2 -$
$2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}^2 + 2\omega_{10}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2 + 2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{15}\omega_{19}^2$

$C_{51} = 12\omega_{10}^3v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} - 18\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3c_s^2 - 12\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{19} + \omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 36\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4\omega_{19} -$
$18\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19} + 72\omega_{16}^2\omega_{10}^2v_3^2\omega_7\omega_{23}c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{19} - 12\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 42\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^4\omega_{19} +$
$12\omega_{16}\omega_{10}^3v_2^2\omega_7^2c_s^2\omega_{19} + 18\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2 + 6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{19} + 5\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^4\omega_{19} - 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{19} - 12\omega_{16}\omega_{10}^3v_3^2\omega_7^2\omega_{19} -$
$6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{19} - 12\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{19} - 12\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{19} + 12\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19} - 24\omega_{16}\omega_{10}^3v_2^2v_3^2\omega_7\omega_{23}\omega_{19} +$
$12\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{19} + 12\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^3\omega_7^3c_s^2\omega_{19} + 36\omega_{16}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 6\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} + 72\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} -$
$18\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{19} - 36\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4 + 24\omega_{16}\omega_{10}^2v_3^2\omega_7\omega_{23}\omega_{19} + 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19} - 12\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{23}c_s^2\omega_{19} -$
$84\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{19} + 12\omega_{10}^3\omega_7^2\omega_{23}c_s^4\omega_{19} + 36\omega_{16}\omega_{10}^3v_3^2\omega_7^2c_s^2\omega_{19} + 36\omega_{16}\omega_{10}^3\omega_7^2c_s^4\omega_{19} - 18\omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2 -$
$12\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{19} - 36\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^3v_3^2\omega_7^3\omega_{19} + 24\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{19} - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{23}c_s^2\omega_{19} - 96\omega_{16}^2\omega_{10}^3\omega_{23}c_s^4\omega_{19} -$
$18\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} - 36\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 12\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^3v_3^2\omega_7^3\omega_{23}\omega_{19} + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19} -$
$12\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19} - 12\omega_{16}\omega_{10}^3v_2^2v_3^2\omega_{23}\omega_{19} + 36\omega_{16}\omega_{10}^2v_3^2\omega_7^2c_s^2\omega_{19} - 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2 - 12\omega_{10}^3\omega_7^3\omega_{23}c_s^4\omega_{19} +$
$24\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7\omega_{23}\omega_{19} - 36\omega_{16}^2\omega_{10}^3v_3^2\omega_7^2c_s^2\omega_{19} + 12\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2c_s^2 + 6\omega_{16}^2\omega_{10}^3v_3^2\omega_7^3 + 36\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 + 2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19} -$
$12\omega_{10}^3v_3^2\omega_7^3\omega_{23}\omega_{19} - 12\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 72\omega_{16}\omega_{10}^3v_3^2\omega_7\omega_{23}c_s^2\omega_{19} - 12\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2c_s^2\omega_{19} + 6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{19} - 12\omega_{16}^2\omega_{10}^3v_3^2\omega_7^2 -$
$12\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{19} - 6\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{19} + 12\omega_{16}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 6\omega_{16}^2\omega_{10}^3v_3^2\omega_7^3\omega_{19} + 18\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 88\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^4\omega_{19} +$
$12\omega_{16}\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{19} - 36\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 30\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^4\omega_{19} - 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} - 54\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} +$
$18\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4 - 72\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 24\omega_{16}^2\omega_{10}^2v_3^2\omega_7\omega_{23}\omega_{19} + 12\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^4\omega_{19} - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23}c_s^2 + 12\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{19} -$
$36\omega_{16}\omega_{10}^3\omega_7^3c_s^4\omega_{19} - 36\omega_{16}\omega_{10}^3v_3^2\omega_7^3c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^3v_2^2v_3^2\omega_7^2\omega_{19} - 18\omega_{16}^2\omega_{10}^3v_3^2\omega_7^3c_s^2 - 12\omega_{16}^2v_3^2\omega_7^3\omega_{23}\omega_{19} + 12\omega_{10}^3v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} -$
$24\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{19} + 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{19} + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{19} - 36\omega_{16}\omega_{10}^3v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 24\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19} +$
$12\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19} - 12\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{19} - 6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23} - 48\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{19} + 12\omega_{16}^2\omega_{10}^3v_2^2v_3^2\omega_7^2 - 36\omega_{10}^3v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} -$
$36\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2 - 12\omega_{16}\omega_{10}^3v_2^2\omega_7^3c_s^2\omega_{19} + 36\omega_{16}^2\omega_7^2\omega_{23}c_s^4\omega_{19} - 42\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{19} + 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{19} - 12\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23} +$
$12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{19} + 150\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{19} + 18\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19} + 6\omega_{16}^2\omega_{10}^3v_2^2v_3^2\omega_7^3\omega_{19} - 18\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19} - 12\omega_{10}^3v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19} -$
$12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 12\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} - 6\omega_{16}^2\omega_{10}^3v_2^2v_3^2\omega_7^3 - \omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19} - 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 18\omega_{16}^2\omega_{10}^3\omega_7^3c_s^4\omega_{19} +$

$12\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{19} - 6\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{19} + 18\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{19} + 6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3c_s^2\omega_{19} + 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23} -$
$12\omega_{16}\omega_{10}^3v_2^2v_3^2\omega_7^3\omega_{19} + 36\omega_{16}^2\omega_{10}^3v_3^2\omega_7^2c_s^2 + 36\omega_{10}^3v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 18\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{19} + 18\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19} + 12\omega_{10}^3v_3^2\omega_7^2\omega_{23}\omega_{19} +$
$12\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19} - 12\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 6\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19} + 36\omega_{16}\omega_{10}^2\omega_7^3c_s^4\omega_{19} + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + 24\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} +$
$18\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 12\omega_{16}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} + 36\omega_{16}\omega_{10}^3v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19} + 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2 + 18\omega_{16}^2\omega_{10}^3v_3^2\omega_7^3c_s^2\omega_{19} + 36\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} +$
$180\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^4\omega_{19} - 6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{19} + 6\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23} - 36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{19} + 108\omega_{16}\omega_{10}^3v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} -$
$12\omega_{16}^2\omega_{10}^3v_2^2v_3^2\omega_7^2\omega_{19} - 12\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19} - 12\omega_{10}^3v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 36\omega_{16}\omega_{10}^3v_3^2\omega_7^2\omega_{23}\omega_{19} + 12\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19} + 12\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{23}c_s^2\omega_{19}$

$C_{52} = 36\omega_{10}^3v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19}+12\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}-18\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3c_s^2-12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4\omega_{19}-24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19}+24\omega_{16}^2\omega_{10}^2v_3^2\omega_7\omega_{23}c_s^2\omega_{19}+$
$36\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{19} + 72\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 24\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^4\omega_{19} + 36\omega_{16}\omega_{10}^3v_2^2\omega_7^2c_s^2\omega_{19} + 6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2 + 6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{19} -$
$\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^4\omega_{19} + 60\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 18\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{19} - 12\omega_{16}\omega_{10}^3v_3^2\omega_7^2\omega_{19} - 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{19} + 24\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} +$
$12\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{19} - 12\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{19} - 12\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19} - 72\omega_{16}\omega_{10}^3v_2^2v_3^2\omega_7\omega_{23}\omega_{19} + 12\omega_{16}^2\omega_{10}^3v_3^2\omega_7^2\omega_{19} + 12\omega_{16}\omega_{10}^3\omega_7^3c_s^2\omega_{19} +$
$12\omega_{16}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19}+18\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19}+24\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19}-6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{19}-48\omega_{16}^2\omega_{10}^3v_2^2\omega_{23}c_s^2\omega_{19}-12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4+$
$24\omega_{16}\omega_{10}^3v_3^2\omega_7\omega_{23}\omega_{19} + 60\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{23}c_s^2\omega_{19} - 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{19} + 12\omega_{16}\omega_{10}^3v_3^2\omega_7^2c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^3\omega_7^2c_s^4\omega_{19} - 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 +$
$18\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2 + 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{19} - 12\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{19} - 12\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^3v_3^2\omega_7^3\omega_{19} + 24\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{19} -$
$84\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{23}c_s^2\omega_{19} - 12\omega_{16}^2\omega_{10}^3\omega_{23}c_s^4\omega_{19} - 54\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} - 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^3v_3^2\omega_7^3\omega_{23}\omega_{19} -$
$6\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19} - 36\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19} - 36\omega_{16}\omega_{10}^3v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} + 12\omega_{16}\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{19} - 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2 +$
$72\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7\omega_{23}\omega_{19} - 12\omega_{16}^2\omega_{10}^3v_3^2\omega_7^2c_s^2\omega_{19} + 36\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2c_s^2 + 6\omega_{16}^2\omega_{10}^3v_3^2\omega_7^3 + 12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 + 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19} -$
$12\omega_{10}^3v_3^2\omega_7^3\omega_{23}\omega_{19} - 42\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 12\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 24\omega_{16}\omega_{10}^3v_3^2\omega_7\omega_{23}c_s^2\omega_{19} - 36\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2c_s^2\omega_{19} + 6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{19} -$
$12\omega_{16}^2\omega_{10}^3v_3^2\omega_7^2 - 12\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{19} - 18\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{19} - 6\omega_{16}^2\omega_{10}^3v_3^2\omega_7^3\omega_{19} - 144\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 4\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^4\omega_{19} +$
$36\omega_{16}\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{19} - 12\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^4\omega_{19} - 36\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} - 18\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4 -$
$24\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 24\omega_{16}^2\omega_{10}^2v_3^2\omega_7\omega_{23}\omega_{19} + 12\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^4\omega_{19} - 36\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23}c_s^2 - 12\omega_{16}\omega_{10}^3\omega_7^3c_s^4\omega_{19} - 12\omega_{16}\omega_{10}^3v_3^2\omega_7^3c_s^2\omega_{19} +$
$36\omega_{16}\omega_{10}^3v_2^2v_3^2\omega_7^2\omega_{19} - 6\omega_{16}^2\omega_{10}^3v_3^2\omega_7^3c_s^2 - 12\omega_{16}^2v_3^2\omega_7^3\omega_{23}\omega_{19} - 24\omega_{10}^3v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 24\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{19} + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{19} -$
$12\omega_{16}\omega_{10}^3v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 72\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19} - 12\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{19} - 6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23} - 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{19} + 36\omega_{16}^2\omega_{10}^3v_2^2v_3^2\omega_7^2 -$
$12\omega_{10}^3v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2 - 36\omega_{16}\omega_{10}^3v_2^2\omega_7^3c_s^2\omega_{19} - 12\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{19} + 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{19} - 36\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23} +$
$12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{19}+24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{19}-132\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19}+18\omega_{16}^2\omega_{10}^3v_2^2v_3^2\omega_7^3\omega_{19}+24\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}-36\omega_{10}^3v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19}-$
$12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 36\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} - 18\omega_{16}^2\omega_{10}^3v_2^2v_3^2\omega_7^3 - 108\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 18\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^4\omega_{19} +$
$12\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{19} + 78\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{19} + 18\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{19} + 18\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3c_s^2\omega_{19} + 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23} +$
$12\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{19} - 36\omega_{16}\omega_{10}^3v_2^2v_3^2\omega_7^3\omega_{19} + 12\omega_{16}^2\omega_{10}^3v_3^2\omega_7^2c_s^2 + 12\omega_{10}^3v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{19} + 180\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19} +$
$12\omega_{10}^3v_3^2\omega_7^2\omega_{23}\omega_{19} + 18\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19} - 12\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19} + 12\omega_{16}\omega_{10}^2\omega_7^3c_s^4\omega_{19} + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + 72\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} +$
$6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} + 36\omega_{16}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} + 108\omega_{16}\omega_{10}^3v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19} + 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2 + 6\omega_{16}^2\omega_{10}^3v_3^2\omega_7^3c_s^2\omega_{19} + 12\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} +$
$18\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^4\omega_{19} - 6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{19} + 18\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23} + 6\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{19} + 36\omega_{16}\omega_{10}^3v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} -$
$36\omega_{16}^2\omega_{10}^3v_2^2v_3^2\omega_7^2\omega_{19} + 24\omega_{10}^3v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 36\omega_{16}\omega_{10}^3v_3^2\omega_7^2\omega_{23}\omega_{19} + 36\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19} + 84\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{23}c_s^2\omega_{19}$

$C_{53} = 13\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 12\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 4\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{11}\omega_{19} - 7\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 -$
$4\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2+8\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2-\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2-2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{11}\omega_{19}^2-2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{11}\omega_{19}^2-$
$4\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + 4\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{11}\omega_{19}^2 - 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} - 6\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 6\omega_{16}\omega_{10}^3\omega_7\omega_{23}\omega_{11}\omega_{19}^2 +$
$4\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + 4\omega_{16}\omega_{10}^3\omega_7^3\omega_{11}\omega_{19}^2 - 4\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + 4\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{11}\omega_{19} + 2\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{11}\omega_{19}^2 - 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 +$
$4\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{11}\omega_{19}^2 - 8\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 6\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2 - 4\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{19}^2 -$
$2\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2\omega_{11}\omega_{19} + 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2 - 2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}\omega_{11}\omega_{19}^2 - 4\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}^2 - 4\omega_{16}\omega_{10}^3\omega_7^3c_s^2\omega_{11}\omega_{19}^2 - 8\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 +$
$5\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 4\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{11}\omega_{19}^2 - 6\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 8\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} +$
$2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{11}\omega_{19} - 8\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - \omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - \omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 11\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 +$
$4\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{11}\omega_{19}^2+\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}+2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2+2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}^2-4\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{11}\omega_{19}^2+4\omega_{16}^2v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2+$
$7\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2+4\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11}+4\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}^2+4\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2-4\omega_{16}\omega_{10}^3\omega_7^2\omega_{11}\omega_{19}^2+26\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2-$
$2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2 + 4\omega_{10}^3v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + 4\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{11}\omega_{19}^2 - 8\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19}^2 +$
$9\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 4\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_{11}\omega_{19}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19} - 15\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 5\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 +$
$\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{19} - 9\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} + 2\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 -$
$2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{11}\omega_{19} - \omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}\omega_{19} + 3\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 3\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + 2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{11}\omega_{19}^2 -$
$4\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{11}\omega_{19} - 5\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + 4\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{19} - 24\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} + 3\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 -$
$16\omega_{16}^2\omega_{10}^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 8\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$
$2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11}+12\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}-2\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}^2-4\omega_{10}^3v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2+2\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2-4\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2$

$C_{54} = 3\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 - 3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 -$
$2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 + 3v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 3\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 +$
$2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 -$
$4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 - 4v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 + 4v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$12c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 + 2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 + 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 - 12c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} +$
$4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 + 4v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 +$
$6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 + 2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 6\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} +$
$12\omega_7^2c_s^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 + 9\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 24\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 12\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 24\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 4v_3^2\omega_7^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 -$
$6\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 4v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 4v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 -$
$6\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 + 8v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_7\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 8\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} -$
$4v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 + 4\omega_7^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 + 8\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 - 8v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 +$

$2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2 -$
$2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2 - 9\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 4v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 -$
$4v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 -$
$12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 + 4v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 - 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} -$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 + 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 12\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 +$
$6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2v_3^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 - 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 +$
$4v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 + 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 - 4v_3^2\omega_7^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 +$
$4\omega_7^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 12\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 4v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$4v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 - 4\omega_7^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2$

$C_{55} = -18\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 9\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 -$
$12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_{18}\omega_6\omega_{19}^2 + 42\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 +$
$12v_3^2\omega_7\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 9\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 -$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12v_3^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 +$
$24\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 54\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 +$
$24c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 6\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 54\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$4v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 30\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 +$
$12v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 - 12v_3^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 +$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 + 3\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 -$
$12\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 - 3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12v_3^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 36c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 18\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 -$
$12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 - 54\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 -$
$36c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 6v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 6\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 +$
$12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 6v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 - 6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 -$
$6\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6\omega_{19}^2 + 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 36\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 36\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 -$
$12v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 + 12\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 - 6v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 -$
$12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6\omega_{19}^2 + 12\omega_7c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 - 6v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 6\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 -$
$24\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_{19}^2 - 9v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 9\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 + 54\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 - 12\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2 +$
$6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 + 18v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 18\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19}^2 +$
$24\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} + 6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 - 12\omega_7c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 +$
$18\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 18v_3^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 42\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 -$
$6\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 24\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 24c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 +$
$12\omega_7c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} - 24\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$6\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 -$
$36\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}\omega_6^2 + 12\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_6^2\omega_{19}^2$

$C_{56} = -11\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{19}^2 + v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 - \omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} - v_3^2\omega_7^3\omega_{20}\omega_8\omega_5\omega_{19}^2 + \omega_7^3\omega_8^2\omega_5\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_5^2\omega_{19}^2 -$
$4\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 2v_3^2\omega_7^3\omega_8\omega_5\omega_{19}^2 + 2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{19} - v_3^2\omega_7^3\omega_{20}\omega_8\omega_5^2\omega_{19}^2 + 7\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 - \omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{19} + 2\omega_7^3c_s^2\omega_{20}\omega_5\omega_{19}^2 -$
$2v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + 2v_3^2\omega_7^2\omega_8^2\omega_5^2\omega_{19} + v_3^2\omega_7^3\omega_8^2\omega_5^2\omega_{19} - 2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{19} + 2\omega_7^3\omega_8\omega_5^2\omega_{19}^2 - v_3^2\omega_7^3\omega_8^2\omega_5^2\omega_{19} + v_3^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{19}^2 - v_3^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 6\omega_7c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 - 2\omega_7^2\omega_8^2\omega_5^2\omega_{19}^2 - 7\omega_7^3c_s^2\omega_{20}\omega_8\omega_5\omega_{19}^2 - \omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19} -$
$2v_3^2\omega_7^2\omega_8^2\omega_5^2\omega_{19}^2 - 2\omega_7^3c_s^2\omega_8\omega_5^2\omega_{19}^2 - 8c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 + 6\omega_7c_s^2\omega_{20}\omega_8\omega_5^2\omega_{19}^2 - 2v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{19} - \omega_7^3\omega_{20}\omega_8\omega_5^2\omega_{19}^2 -$
$\omega_7^3c_s^2\omega_8^2\omega_5\omega_{19}^2 - \omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 + \omega_7^3\omega_8^2\omega_5^2\omega_{19} - \omega_7^3\omega_{20}\omega_8^2\omega_5^2 + 2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{19}^2 + 2v_3^2\omega_7^2\omega_8\omega_5^2\omega_{19}^2 + \omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{19}^2 + \omega_7^3\omega_{20}\omega_8\omega_5\omega_{19}^2 +$
$4v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 2\omega_7^2\omega_8^2\omega_5^2\omega_{19}^2 - 2v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{19} + \omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{19}^2 + v_3^2\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{19} + 13\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 + 5\omega_7^3c_s^2\omega_{20}\omega_8\omega_5^2\omega_{19}^2 +$
$2\omega_7^3c_s^2\omega_8\omega_5\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + \omega_7^3\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 2\omega_7^3c_s^2\omega_{20}\omega_5^2\omega_{19}^2 - 5\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - v_3^2\omega_7^3\omega_8^2\omega_5\omega_{19}^2 + v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 -$
$2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} - 2\omega_7^3\omega_8\omega_5\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_{19}^2 - \omega_7^3c_s^2\omega_8^2\omega_5^2\omega_{19} + \omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{19} + 8\omega_7c_s^2\omega_{20}\omega_8^2\omega_5\omega_{19}^2 + 4\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{19}^2 - 12v_3^2\omega_7\omega_{20}\omega_8^2\omega_5\omega_{19}^2 -$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{19} + 4\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 8\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 12v_3^2\omega_7^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 -$
$2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} - 12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 -$
$2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 + 24v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_7\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 12v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 8\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} -$
$12v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 + 4\omega_7^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 + 8\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 - 24v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 +$
$6v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} + 4\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2 -$
$2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 12v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 -$
$12v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 - 4\omega_7^2c_s^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 12v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}^2 -$

$4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{18}\omega_6\omega_{19}^2 + 12v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 - 4\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 6v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} -$
$4\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 + 4\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 + 4\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 6v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 +$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19} + 2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 6v_3^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 - 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 +$
$12v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6 + 4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 - 12v_3^2\omega_7^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}^2 +$
$4\omega_7^2\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 12v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$12v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}^2 - 12v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 - 4\omega_7^2\omega_{11}^2\omega_{18}\omega_6\omega_{19}^2 + 4\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_6\omega_{19}^2$

$C_{58} = 36\omega_{16}\omega_{10}\omega_7^2c_s^4\omega_{11}^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} - 36\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 36\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19}^2 + 9\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 -$
$18\omega_{16}\omega_{10}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} + 12v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} - 3\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 +$
$12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{11}^2\omega_{19}^2 - 36\omega_{16}\omega_{10}v_2^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 9\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 +$
$6\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 + 12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 12\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 +$
$12\omega_{10}v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 18\omega_{16}\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 + 18\omega_{16}\omega_{10}\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2 - 60\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 +$
$12\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 15\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 18\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 - 6\omega_{16}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 6\omega_{16}\omega_{10}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 -$
$18\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 6\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19} - 36\omega_{10}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 27\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 +$
$156\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 + 12\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 12v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 36\omega_{10}\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 +$
$12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{10}v_2^2\omega_7^2\omega_{11}^2\omega_{19}^2 + 18\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{16}\omega_{10}v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19} + 18\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 +$
$12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19}^2 + 36\omega_{10}v_2^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19} - 12\omega_{16}\omega_{10}v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$
$12\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{19}^2 + 12\omega_{10}v_2^2v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 + 36v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} - 6\omega_{16}\omega_{10}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} -$
$72\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 36\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 18\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} + 36\omega_{10}\omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 -$
$12v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 36\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 6\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 6\omega_{16}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19} -$
$36\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 18\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19}^2 + 6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 24\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{11}^2\omega_{19} +$
$36\omega_{16}\omega_{10}v_2^2\omega_7^2c_s^2\omega_{11}^2\omega_{19} + 144\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 6\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 72\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 5\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$
$12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{11}^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} - 42\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19} - 24\omega_{16}\omega_{10}v_2^2v_3^2\omega_7\omega_{23}\omega_{11}^2\omega_{19} -$
$18\omega_{16}\omega_{10}\omega_7^3c_s^4\omega_{11}^2\omega_{19} - 12\omega_{10}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 36\omega_{16}\omega_{10}\omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 -$
$12\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 24\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 36\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 36\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 24\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}\omega_{11}^2\omega_{19} +$
$\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 18\omega_{16}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 18\omega_{16}\omega_{10}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 36v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} +$
$36\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - \omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 36\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} + 12v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 36\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 -$
$12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} + 12\omega_{10}v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 15\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} + 12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 12\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 +$
$6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 15\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} - 5\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 +$
$6\omega_{16}v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2 - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 12\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$36\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 - 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 15\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19} - 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 +$
$36\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 45\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2 + 72\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 3\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 -$
$12\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 36\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}^2 - 12v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2 +$
$18\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{11}^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19} + 48\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} + 24\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} -$
$12\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 24\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2 - 108\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$
$6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19}^2 + 3\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 72\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 48\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} - 96\omega_{16}\omega_{10}\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 -$
$24\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} + 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{19}^2 + 24\omega_{16}\omega_{10}v_2^2v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{10}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 54\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2$

$C_{59} = 12\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 + 18\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 24\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}^2 + 36\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2\omega_{19} +$
$\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 72\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 24\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 - 18\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}^2 +$
$24\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2\omega_{19} - 42\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 66\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} + 24\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{11}^2\omega_{19} - 24\omega_{16}\omega_{10}^2\omega_{10}^2\omega_{11}^2\omega_{19}^2 +$
$12\omega_{16}^2\omega_{10}^2v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} + 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 48\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 +$
$24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}^2 + 24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 24\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}^2 + 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{19}^2 + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} -$
$24\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 132\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 24\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 48\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 +$
$24\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19} - 24\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} - 24\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 -$
$12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 - 24\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + 24\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 24\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 -$
$24\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2 - 24\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} - 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{19}^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} - 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2 -$
$18\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} + 36\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19}^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} + 24\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} + 12\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 84\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 -$
$6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{19}^2 - 18\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 90\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 12\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 + 24\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 -$
$36\omega_{16}^2\omega_{10}^2v_3^2\omega_7\omega_{23}\omega_{11}^2\omega_{19} - \omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 + 84\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 66\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} - 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2 + 6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} - 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 24\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} - 72\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 -$
$12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} + 24\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19} - 12\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} - 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{11}^2\omega_{19} - 24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} -$
$36\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 24\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{11}^2\omega_{19} + 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} + 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{19}^2 + 12\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 +$
$156\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} - 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 + 24\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 +$
$12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 + 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 - 24\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 +$
$60\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 96\omega_{16}^2\omega_{10}^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19} + 4\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 -$
$12\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 - 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} - 66\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2 + 18\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}$

$C_{60} = 12\omega_{16}\omega_{10}\omega_7^2c_s^4\omega_{11}^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} - 12\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{19}^2 + 27\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 -$
$6\omega_{16}\omega_{10}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} + 36v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 30\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 18\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + 24\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 +$
$12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 36\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 9\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 +$
$6\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 36\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 12\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 + 36\omega_{10}v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 6\omega_{16}\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 +$
$6\omega_{16}\omega_{10}\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 - 36\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2 - 5\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 + 12\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 5\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 +$
$6\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 - 18\omega_{16}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 18\omega_{16}\omega_{10}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 6\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 6\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19} -$

$$12\omega_{10}v_2^2v_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 9\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 18\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 + 36\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$$
$$12\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 12v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{10}\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 + 12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{10}v_2^2\omega_7^2\omega_{11}^2\omega_{19}^2 +$$
$$6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 36\omega_{16}\omega_{10}v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19} + 54\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 36\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19}^2 + 12\omega_{10}v_2^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 -$$
$$12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^2\omega_{19} - 36\omega_{16}\omega_{10}v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{19}^2 + 36\omega_{10}v_2^2v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 +$$
$$12v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 18\omega_{16}\omega_{10}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} - 24\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} +$$
$$12\omega_{10}\omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 + \omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 36v_2^2v_3^2\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 6\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 6\omega_{16}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 +$$
$$12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19} - 108\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19}^2 - 12\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 72\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 -$$
$$12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{11}^2\omega_{19} + 12\omega_{16}\omega_{10}v_2^2\omega_7^2c_s^2\omega_{11}^2\omega_{19} + 48\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 6\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 24\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} +$$
$$5\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 36\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{11}^2\omega_{19} - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} - 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19} - 72\omega_{16}\omega_{10}v_2^2v_3^2\omega_7\omega_{23}\omega_{11}^2\omega_{19} -$$
$$6\omega_{16}\omega_{10}\omega_7^3c_s^4\omega_{11}^2\omega_{19} - 36\omega_{10}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_{10}\omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 - 36\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$$
$$24\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 36\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 12\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 24\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}\omega_{11}^2\omega_{19} - 6\omega_{16}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 +$$
$$6\omega_{16}\omega_{10}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 12v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 18\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} + 12\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} +$$
$$36v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 12\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 - 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} + 12\omega_{10}v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 15\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} + 12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2 +$$
$$60\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 18\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 45\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} - 15\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 36\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} -$$
$$6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 6\omega_{16}v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2 - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 36\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 15\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 +$$
$$18\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 18\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 - 18\omega_{16}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19} -$$
$$18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 15\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 24\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - \omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 -$$
$$36\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}^2 - 36v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 48\omega_{16}\omega_{10}v_3^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 -$$
$$102\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{11}^2\omega_{19} - 18\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19} - 48\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} + 24\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} +$$
$$60\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 12\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 36\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 24\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2 - 36\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 -$$
$$18\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19}^2 - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 24\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 144\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} - 12\omega_{16}\omega_{10}\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 -$$
$$72\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} + 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{19}^2 + 72\omega_{16}\omega_{10}v_2^2v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19}^2 - 36\omega_{10}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2$$

$$C_{61} = 14\omega_7^2c_s^4\omega_{11}\omega_{19}^2 - 96v_3^4\omega_7\omega_{11}\omega_{19}^2 + 48\omega_7c_s^4\omega_{11}^2\omega_{19} - 12\omega_7^2c_s^2\omega_{11}^2 - 126v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19} - 96v_3^2\omega_7\omega_{11}^2\omega_{19} - 48v_3^4\omega_{11}^2\omega_{19} - 216v_3^2c_s^2\omega_{11}^2\omega_{19} -$$
$$432v_3^2\omega_7c_s^2\omega_{11}\omega_{19}^2 - 3v_3^4\omega_7^2\omega_{11}^2\omega_{19}^2 - 24v_3^4\omega_7\omega_{11}^2 - 72v_3^2\omega_7\omega_{19}^2 - 144v_3^2\omega_7^2c_s^2\omega_{19}^2 + 24\omega_7c_s^4\omega_{19}^2 - 24v_3^2\omega_7^2\omega_{11}\omega_{19} - 24c_s^4\omega_{11}^2\omega_{19} - 14\omega_7^2c_s^2\omega_{11}\omega_{19}^2 -$$
$$48\omega_7c_s^2\omega_{11}^2\omega_{19} - 36v_3^2\omega_7^2\omega_{11}\omega_{19}^2 - 30v_3^4\omega_7^2\omega_{11}^2\omega_{19} + 12\omega_7^2c_s^2\omega_{19}^2 + 48v_3^2\omega_{11}^2\omega_{19} - 12v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 24\omega_7c_s^4\omega_{11}^2 + 72v_3^2\omega_7^2c_s^2\omega_{11}^2 + 24v_3^2\omega_7\omega_{11}^2 -$$
$$144v_3^2\omega_7c_s^2\omega_{11}\omega_{19} + 72v_3^4\omega_7\omega_{19}^2 - 48v_3^4\omega_7\omega_{11}\omega_{19} + 24c_s^2\omega_{11}^2\omega_{19} + 96v_3^2\omega_7\omega_{11}\omega_{19}^2 + 150v_3^2\omega_7^2c_s^2\omega_{11}\omega_{19}^2 - 12v_3^2\omega_7^2\omega_{11}^2 + 432v_3^2\omega_7c_s^2\omega_{11}^2\omega_{19} +$$
$$216v_3^2c_s^2\omega_{11}\omega_{19}^2 + 48v_3^4\omega_{11}\omega_{19}^2 - 12\omega_7^2c_s^4\omega_{11}^2\omega_{19} - 36v_3^4\omega_7^2\omega_{19}^2 - 48\omega_7c_s^4\omega_{11}\omega_{19}^2 - 24\omega_7c_s^2\omega_{19}^2 + 96v_3^4\omega_7\omega_{11}^2\omega_{19} - 144v_3^2\omega_7c_s^2\omega_{11}^2 + \omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 +$$
$$3v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 + 24c_s^4\omega_{11}\omega_{19}^2 + 12\omega_7^2c_s^4\omega_{11}^2 + 24v_3^4\omega_7^2\omega_{11}\omega_{19} + 24\omega_7c_s^2\omega_{11}^2 + 36v_3^4\omega_7^2\omega_{11}\omega_{19}^2 - 48v_3^2\omega_{11}\omega_{19}^2 + 12v_3^4\omega_7^2\omega_{11}^2 + 12\omega_7^2c_s^2\omega_{11}^2\omega_{19} +$$
$$36v_3^2\omega_7^2\omega_{19}^2 + 30v_3^2\omega_7^2\omega_{11}^2\omega_{19} + 48\omega_7c_s^2\omega_{11}\omega_{19}^2 - \omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 - 24c_s^2\omega_{11}\omega_{19}^2 + 48v_3^2\omega_7\omega_{11}\omega_{19} - 12\omega_7^2c_s^4\omega_{19}^2 + 72v_3^2\omega_7^2c_s^2\omega_{11}\omega_{19} + 288v_3^2\omega_7c_s^2\omega_{19}^2$$

$$C_{62} = -48v_3^4\omega_7\omega_{19} - 24v_3^4\omega_7^2 + 12v_3^2\omega_7^3c_s^2 + 24c_s^4\omega_{19}^2 + 24\omega_7^2c_s^2\omega_{19} + 6\omega_7^3c_s^4\omega_{19} - 24v_3^2\omega_7\omega_{19}^2 - 72v_3^2\omega_7^2c_s^2\omega_{19}^2 - 48\omega_7c_s^4\omega_{19}^2 + 12v_3^4\omega_7^3 -$$
$$3\omega_7^3c_s^4\omega_{19}^2 + 48v_3^2\omega_7^2c_s^2\omega_{19} + 48v_3^2\omega_7\omega_{19} - 24v_3^2\omega_7^2c_s^2 + 24\omega_7c_s^4\omega_{19} - 8\omega_7^2c_s^2\omega_{19}^2 + 24v_3^4\omega_7\omega_{19}^2 + 6v_3^2\omega_7^3c_s^2\omega_{19}^2 - 24\omega_7^2c_s^4\omega_{19} - 3v_3^2\omega_7^3\omega_{19}^2 -$$
$$24v_3^2\omega_7c_s^2\omega_{19} - 6\omega_7^3c_s^2\omega_{19} - 24v_3^4\omega_7^2\omega_{19}^2 - 12v_3^2\omega_7^3 + 12\omega_7c_s^2\omega_{19}^2 - 72v_3^2\omega_7^2\omega_{19} - 96v_3^2c_s^2\omega_{19}^2 + 24v_3^2\omega_7^2 - 18v_3^4\omega_7^3\omega_{19} + 3v_3^4\omega_7^3\omega_{19}^2 +$$
$$24v_3^2\omega_7^2\omega_{19}^2 + \omega_7^3c_s^2\omega_{19}^2 + 72v_3^4\omega_7^2\omega_{19} - 24\omega_7c_s^2\omega_{19} - 12v_3^2\omega_7^3c_s^2\omega_{19} + 24\omega_7^2c_s^4\omega_{19}^2 + 156v_3^2\omega_7c_s^2\omega_{19}^2 + 18v_3^2\omega_7^3\omega_{19}$$

$$C_{63} =$$
$$-48\omega_7\omega_{19}^2 + 24\omega_7^2c_s^2\omega_{11}^2 + 168v_3^2\omega_7\omega_{11}^2\omega_{19} - 25\omega_7^2\omega_{11}\omega_{19}^2 + 120v_3^2\omega_7\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{11}\omega_{19} + 36v_3^2\omega_7^2\omega_{11}\omega_{19} + 39\omega_7^2c_s^2\omega_{11}\omega_{19}^2 + 120\omega_7c_s^2\omega_{11}^2\omega_{19} +$$
$$61v_3^2\omega_7^2\omega_{11}\omega_{19}^2 - 36\omega_7^2c_s^2\omega_{19}^2 - 12\omega_7^2\omega_{11}\omega_{19} + 24\omega_7\omega_{11}^2 - 84v_3^2\omega_{11}^2\omega_{19} - 48v_3^2\omega_7\omega_{11}^2 + 36\omega_{11}^2\omega_{19} - 72\omega_7\omega_{11}^2\omega_{19} - 60c_s^2\omega_{11}^2\omega_{19} - 168v_3^2\omega_7\omega_{11}\omega_{19}^2 +$$
$$24v_3^2\omega_7^2\omega_{11}^2 + 24\omega_7\omega_{11}\omega_{19} + 72\omega_7c_s^2\omega_{19}^2 - 3\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 5v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 - 24\omega_7c_s^2\omega_{11}\omega_{19} - 12\omega_7^2\omega_{11}^2 + 21\omega_7^2\omega_{11}^2\omega_{19} - 48\omega_7c_s^2\omega_{11}^2 + 2\omega_7^2\omega_{11}^2\omega_{19}^2 +$$
$$84v_3^2\omega_{11}\omega_{19}^2 - 33\omega_7^2c_s^2\omega_{11}^2\omega_{19} - 60v_3^2\omega_7^2\omega_{19}^2 - 51v_3^2\omega_7^2\omega_{11}^2\omega_{19} - 120\omega_7c_s^2\omega_{11}\omega_{19}^2 + 72\omega_7\omega_{11}\omega_{19}^2 + 24\omega_7^2\omega_{19}^2 + 60c_s^2\omega_{11}\omega_{19}^2 - 72v_3^2\omega_7\omega_{11}\omega_{19} - 36\omega_{11}\omega_{19}^2$$

2.3.5 Conservation of momentum: ρv_3

$$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{v_3v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{v_2v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_2} + (v_3^2 + c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} +$$
$$\frac{2v_3\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3}$$
$$+ (-2 + 6v_3^2 - 3v_3^2\omega_{11} + 4c_s^2 + \omega_{11} - 2c_s^2\omega_{11})\frac{\delta_l^2}{\omega_{11}\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + (2-\omega_{11})\frac{3v_3\rho\delta_l^2}{\omega_{11}\delta_t}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_6)\frac{\rho c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} +$$
$$(-2+\omega_7)\frac{\rho c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial^2 v_3}{\partial x_2^2} + (-2+\omega_6)\frac{\rho c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + (-2+\omega_7)\frac{\rho c_s^2\delta_l^2}{2\omega_7\delta_t}\frac{\partial^2 v_2}{\partial x_2\partial x_3} +$$
$$(-2 + 2v_3^2 - v_3^2\omega_{11} + 6c_s^2 + \omega_{11} - 3c_s^2\omega_{11})\frac{v_3\delta_l^2}{2\omega_{11}\delta_t}\frac{\partial^2\rho}{\partial x_3^2} + (-2 + 6v_3^2 - 3v_3^2\omega_{11} + 2c_s^2 + \omega_{11} - c_s^2\omega_{11})\frac{\rho\delta_l^2}{2\omega_{11}\delta_t}\frac{\partial^2 v_3}{\partial x_3^2} +$$
$$C_1\frac{v_3v_1\delta_l^3}{12\omega_{13}\omega_9\omega_6\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + C_2\frac{v_3\rho\delta_l^3}{12\omega_{13}\omega_9\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_3\frac{\rho v_1\delta_l^3}{6\omega_{13}\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1^3} +$$
$$(-\omega_7\omega_8\omega_5\omega_6 + 6\omega_7\omega_8\omega_6 - 6\omega_7\omega_8 - 6\omega_8\omega_6 + 6\omega_7\omega_5 - 6\omega_7\omega_5\omega_6 + 6\omega_5\omega_6)\frac{v_3\rho c_s^2\delta_l^3}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$(\omega_7\omega_6 - \omega_7\omega_6^2 + \omega_7\omega_8\omega_6 - \omega_7\omega_8 - \omega_8\omega_6 + \omega_6^2)\frac{v_2\rho c_s^2\delta_l^3}{\omega_7\omega_8\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_2} +$$
$$(-\omega_7\omega_8\omega_5\omega_6 + 6\omega_7\omega_8\omega_6 - 6\omega_7\omega_8 - 6\omega_8\omega_6 + 6\omega_7\omega_5 - 6\omega_7\omega_5\omega_6 + 6\omega_5\omega_6)\frac{v_3\rho c_s^2\delta_l^3}{6\omega_7\omega_8\omega_5\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} +$$
$$(\omega_7\omega_6 + \omega_7\omega_8\omega_6 - \omega_7\omega_8 - \omega_8\omega_6 + \omega_7^2 - \omega_7^2\omega_6)\frac{\rho v_1c_s^2\delta_l^3}{\omega_7^2\omega_8\omega_6\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2^2} + C_4\frac{v_2v_3\delta_l^3}{12\omega_{16}\omega_{10}\omega_7\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C_5\frac{v_3\rho\delta_l^3}{12\omega_{16}\omega_{10}\omega_7\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} +$$

$$
\begin{aligned}
&C_6 \frac{v_2 \rho \delta_l^3}{6\omega_{16}\omega_7^2\delta_t} \frac{\partial^3 v_3}{\partial x_2^3} + (-12 - \omega_6^2 + 12\omega_6) \frac{c_s^4 \delta_l^3}{6\omega_6^2 \delta_t} \frac{\partial^3 \rho}{\partial x_1^2 \partial x_3} + (-2\omega_{13} - \omega_6^2 + \omega_{13}\omega_6 + 2\omega_6) \frac{\rho v_1 c_s^2 \delta_l^3}{\omega_{13}\omega_6^2 \delta_t} \frac{\partial^3 v_1}{\partial x_1^2 \partial x_3} + \\
&(-12\omega_{18}\omega_6 - 12\omega_{11}\omega_{18} + 12\omega_6^2 - \omega_{11}\omega_{18}\omega_6^2 - 12\omega_{11}\omega_6^2 + 12\omega_{11}\omega_{18}\omega_6 + 12\omega_{11}\omega_6) \frac{v_3 \rho c_s^2 \delta_l^3}{6\omega_{11}\omega_{18}\omega_6^2 \delta_t} \frac{\partial^3 v_3}{\partial x_1^2 \partial x_3} + \\
&(\omega_7\omega_6 - \omega_7\omega_6^2 + \omega_7\omega_8\omega_6 - \omega_7\omega_8 - \omega_8\omega_6 + \omega_6^2) \frac{v_2 \rho c_s^2 \delta_l^3}{\omega_7\omega_8\omega_6^2 \delta_t} \frac{\partial^3 v_1}{\partial x_1 \partial x_2 \partial x_3} + \\
&(\omega_7\omega_6 + \omega_7\omega_8\omega_6 - \omega_7\omega_8 - \omega_8\omega_6 + \omega_7^2 - \omega_7^2\omega_6) \frac{\rho v_1 c_s^2 \delta_l^3}{\omega_7^2\omega_8\omega_6 \delta_t} \frac{\partial^3 v_2}{\partial x_1 \partial x_2 \partial x_3} + (-12 + 12\omega_7 - \omega_7^2) \frac{c_s^4 \delta_l^3}{6\omega_7^2 \delta_t} \frac{\partial^3 \rho}{\partial x_2^2 \partial x_3} + \\
&(-2\omega_{16} + 2\omega_7 + \omega_{16}\omega_7 - \omega_7^2) \frac{v_2 \rho c_s^2 \delta_l^3}{\omega_{16}\omega_7^2 \delta_t} \frac{\partial^3 v_2}{\partial x_2^2 \partial x_3} + \\
&(12\omega_7\omega_{11} - \omega_7^2\omega_{11}\omega_{19} + 12\omega_7^2 - 12\omega_7\omega_{19} - 12\omega_{11}\omega_{19} + 12\omega_7\omega_{11}\omega_{19} - 12\omega_7^2\omega_{11}) \frac{v_3 \rho c_s^2 \delta_l^3}{6\omega_7^2\omega_{11}\omega_{19} \delta_t} \frac{\partial^3 v_3}{\partial x_2^2 \partial x_3} + \\
&C_7 \frac{v_3 v_1 \delta_l^3}{\omega_{11}^2\omega_{18}\omega_6 \delta_t} \frac{\partial^3 \rho}{\partial x_1 \partial x_3^2} + C_8 \frac{v_3 \rho \delta_l^3}{12\omega_{11}^2\omega_{18}\omega_6^2 \delta_t} \frac{\partial^3 v_1}{\partial x_1 \partial x_3^2} + C_9 \frac{\rho v_1 \delta_l^3}{\omega_{11}^2\omega_{18}\omega_6 \delta_t} \frac{\partial^3 v_3}{\partial x_1 \partial x_3^2} + C_{10} \frac{v_2 v_3 \delta_l^3}{\omega_7\omega_{11}^2\omega_{19} \delta_t} \frac{\partial^3 \rho}{\partial x_2 \partial x_3^2} + \\
&C_{11} \frac{v_3 \rho \delta_l^3}{12\omega_7^2\omega_{11}^2\omega_{19} \delta_t} \frac{\partial^3 v_2}{\partial x_2 \partial x_3^2} + C_{12} \frac{v_2 \rho \delta_l^3}{\omega_7\omega_{11}^2\omega_{19} \delta_t} \frac{\partial^3 v_3}{\partial x_2 \partial x_3^2} + C_{13} \frac{\delta_l^3}{12\omega_{11}^2 \delta_t} \frac{\partial^3 \rho}{\partial x_3^3} + \\
&(-24 + 60v_3^2 - 60v_3^2\omega_{11} + 36c_s^2 + 11v_3^2\omega_{11}^2 + 24\omega_{11} - 4\omega_{11}^2 - 36c_s^2\omega_{11} + 5c_s^2\omega_{11}^2) \frac{v_3 \rho \delta_l^3}{6\omega_{11}^2 \delta_t} \frac{\partial^3 v_3}{\partial x_3^3} + C_{14} \frac{v_3 \delta_l^4}{24\omega_{13}^2\omega_9^2\omega_6^2 \delta_t} \frac{\partial^4 \rho}{\partial x_1^4} + \\
&C_{15} \frac{v_3 \rho v_1 \delta_l^4}{12\omega_{13}^2\omega_9^2\omega_6^2 \delta_t} \frac{\partial^4 v_1}{\partial x_1^4} + C_{16} \frac{\rho \delta_l^4}{24\omega_{13}^2\omega_6^3 \delta_t} \frac{\partial^4 v_3}{\partial x_1^4} + C_{17} \frac{v_2 v_3 v_1 \delta_l^4}{4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 \delta_t} \frac{\partial^4 \rho}{\partial x_1^3 \partial x_2} + \\
&C_{18} \frac{v_2 v_3 \rho \delta_l^4}{4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 \delta_t} \frac{\partial^4 v_1}{\partial x_1^3 \partial x_2} + C_{19} \frac{v_3 \rho v_1 \delta_l^4}{12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 \delta_t} \frac{\partial^4 v_2}{\partial x_1^3 \partial x_2} + C_{20} \frac{v_2 \rho v_1 \delta_l^4}{2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_6^3 \delta_t} \frac{\partial^4 v_3}{\partial x_1^3 \partial x_2} + \\
&C_{21} \frac{v_3 c_s^4 \delta_l^4}{6\omega_7^2\omega_8^2\omega_5^2\omega_6^2 \delta_t} \frac{\partial^4 \rho}{\partial x_1^2 \partial x_2^2} + C_{22} \frac{v_3 \rho v_1 c_s^2 \delta_l^4}{2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 \delta_t} \frac{\partial^4 v_1}{\partial x_1^2 \partial x_2^2} + C_{23} \frac{v_2 v_3 \rho c_s^2 \delta_l^4}{2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 \delta_t} \frac{\partial^4 v_2}{\partial x_1^2 \partial x_2^2} + \\
&C_{24} \frac{\rho c_s^2 \delta_l^4}{2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_6^3 \delta_t} \frac{\partial^4 v_3}{\partial x_1^2 \partial x_2^2} + C_{25} \frac{v_2 v_3 v_1 \delta_l^4}{4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 \delta_t} \frac{\partial^4 \rho}{\partial x_1 \partial x_2^3} + C_{26} \frac{v_2 v_3 \rho \delta_l^4}{12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 \delta_t} \frac{\partial^4 v_1}{\partial x_1 \partial x_2^3} + \\
&C_{27} \frac{v_3 \rho v_1 \delta_l^4}{4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 \delta_t} \frac{\partial^4 v_2}{\partial x_1 \partial x_2^3} + C_{28} \frac{v_2 \rho v_1 \delta_l^4}{2\omega_{16}^2\omega_7^3\omega_{17}\omega_8^2\omega_6^2 \delta_t} \frac{\partial^4 v_3}{\partial x_1 \partial x_2^3} + C_{29} \frac{v_3 \delta_l^4}{24\omega_{16}^2\omega_{10}^2\omega_7^2 \delta_t} \frac{\partial^4 \rho}{\partial x_2^4} + C_{30} \frac{v_2 v_3 \rho \delta_l^4}{12\omega_{16}^2\omega_{10}^2\omega_7^2 \delta_t} \frac{\partial^4 v_2}{\partial x_2^4} + \\
&C_{31} \frac{\rho \delta_l^4}{24\omega_{16}^2\omega_7^3 \delta_t} \frac{\partial^4 v_3}{\partial x_2^4} + C_{32} \frac{v_1 \delta_l^4}{12\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} \delta_t} \frac{\partial^4 \rho}{\partial x_1^3 \partial x_3} + C_{33} \frac{\rho \delta_l^4}{12\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} \delta_t} \frac{\partial^4 v_1}{\partial x_1^3 \partial x_3} + \\
&C_{34} \frac{v_3 \rho v_1 \delta_l^4}{12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22} \delta_t} \frac{\partial^4 v_3}{\partial x_1^3 \partial x_3} + C_{35} \frac{\delta_l^4}{2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} \delta_t} \frac{\partial^4 \rho}{\partial x_1^2 \partial x_2 \partial x_3} + \\
&C_{36} \frac{\rho \delta_l^4}{2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} \delta_t} \frac{\partial^4 v_1}{\partial x_1^2 \partial x_2 \partial x_3} + C_{37} \frac{\rho \delta_l^4}{12\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} \delta_t} \frac{\partial^4 v_2}{\partial x_1^2 \partial x_2 \partial x_3} + \\
&C_{38} \frac{v_3 \rho \delta_l^4}{2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} \delta_t} \frac{\partial^4 v_3}{\partial x_1^2 \partial x_2 \partial x_3} + C_{39} \frac{\delta_l^4}{2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} \delta_t} \frac{\partial^4 \rho}{\partial x_1 \partial x_2^2 \partial x_3} + \\
&C_{40} \frac{\rho \delta_l^4}{12\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} \delta_t} \frac{\partial^4 v_1}{\partial x_1 \partial x_2^2 \partial x_3} + C_{41} \frac{v_2 \rho \delta_l^4}{\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} \delta_t} \frac{\partial^4 v_2}{\partial x_1 \partial x_2^2 \partial x_3} + \\
&C_{42} \frac{\rho \delta_l^4}{2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} \delta_t} \frac{\partial^4 v_3}{\partial x_1 \partial x_2^2 \partial x_3} + C_{43} \frac{v_2 \delta_l^4}{12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} \delta_t} \frac{\partial^4 \rho}{\partial x_2^3 \partial x_3} + \\
&C_{44} \frac{\rho \delta_l^4}{12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} \delta_t} \frac{\partial^4 v_2}{\partial x_2^3 \partial x_3} + C_{45} \frac{v_2 v_3 \rho \delta_l^4}{12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} \delta_t} \frac{\partial^4 v_3}{\partial x_2^3 \partial x_3} + C_{46} \frac{v_3 \delta_l^4}{12\omega_{13}\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} \delta_t} \frac{\partial^4 \rho}{\partial x_1^2 \partial x_3^2} + \\
&C_{47} \frac{v_3 \rho v_1 \delta_l^4}{2\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3\omega_{22} \delta_t} \frac{\partial^4 v_1}{\partial x_1^2 \partial x_3^2} + C_{48} \frac{\rho \delta_l^4}{12\omega_{13}\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} \delta_t} \frac{\partial^4 v_3}{\partial x_1^2 \partial x_3^2} + C_{49} \frac{v_2 v_3 v_1 \delta_l^4}{\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 \delta_t} \frac{\partial^4 \rho}{\partial x_1 \partial x_2 \partial x_3^2} + \\
&C_{50} \frac{v_2 v_3 \rho \delta_l^4}{2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 \delta_t} \frac{\partial^4 v_1}{\partial x_1 \partial x_2 \partial x_3^2} + C_{51} \frac{v_3 \rho v_1 \delta_l^4}{2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 \delta_t} \frac{\partial^4 v_2}{\partial x_1 \partial x_2 \partial x_3^2} + \\
&C_{52} \frac{v_2 \rho v_1 \delta_l^4}{\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 \delta_t} \frac{\partial^4 v_3}{\partial x_1 \partial x_2 \partial x_3^2} + C_{53} \frac{v_3 \delta_l^4}{12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3\omega_{19}^2 \delta_t} \frac{\partial^4 \rho}{\partial x_2^2 \partial x_3^2} + C_{54} \frac{v_2 v_3 \rho \delta_l^4}{2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3\omega_{19}^2 \delta_t} \frac{\partial^4 v_2}{\partial x_2^2 \partial x_3^2} + \\
&C_{55} \frac{\rho \delta_l^4}{12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3\omega_{19}^2 \delta_t} \frac{\partial^4 v_3}{\partial x_2^2 \partial x_3^2} + C_{56} \frac{v_1 \delta_l^4}{4\omega_{11}^3\omega_{18}^2\omega_6^2 \delta_t} \frac{\partial^4 \rho}{\partial x_1 \partial x_3^3} + C_{57} \frac{\rho \delta_l^4}{12\omega_{11}^3\omega_{18}^2\omega_6^3 \delta_t} \frac{\partial^4 v_1}{\partial x_1 \partial x_3^3} + C_{58} \frac{v_3 \rho v_1 \delta_l^4}{4\omega_{11}^3\omega_{18}^2\omega_6^2 \delta_t} \frac{\partial^4 v_3}{\partial x_1 \partial x_3^3} + \\
&C_{59} \frac{v_2 \delta_l^4}{4\omega_7^2\omega_{11}^3\omega_{19}^2 \delta_t} \frac{\partial^4 \rho}{\partial x_2 \partial x_3^3} + C_{60} \frac{\rho \delta_l^4}{12\omega_7^3\omega_{11}^3\omega_{19}^2 \delta_t} \frac{\partial^4 v_2}{\partial x_2 \partial x_3^3} + C_{61} \frac{v_2 v_3 \rho \delta_l^4}{4\omega_7^2\omega_{11}^3\omega_{19}^2 \delta_t} \frac{\partial^4 v_3}{\partial x_2 \partial x_3^3} + C_{62} \frac{v_3 \delta_l^4}{12\omega_{11}^3 \delta_t} \frac{\partial^4 \rho}{\partial x_3^4} + C_{63} \frac{\rho \delta_l^4}{12\omega_{11}^3 \delta_t} \frac{\partial^4 v_3}{\partial x_3^4} \\
&= 0,
\end{aligned}
$$

where:

$C_1 = 3\omega_{13}c_s^2\omega_9\omega_6 - 12\omega_{13} - 6\omega_{13}v_1^2\omega_6 + \omega_{13}v_1^2\omega_9\omega_6 - 18\omega_{13}c_s^2\omega_6 - \omega_{13}\omega_9\omega_6 + 12\omega_{13}v_1^2 + 36\omega_{13}c_s^2 - 36c_s^2\omega_9 + 18c_s^2\omega_9\omega_6 - 6\omega_9\omega_6 - 12v_1^2\omega_9 + 12\omega_9 + 6\omega_{13}\omega_6 + 6v_1^2\omega_9\omega_6$

$C_2 = \omega_{13}c_s^2\omega_9\omega_6 - 12\omega_{13} - 18\omega_{13}v_1^2\omega_6 + 3\omega_{13}v_1^2\omega_9\omega_6 - 6\omega_{13}c_s^2\omega_6 - \omega_{13}\omega_9\omega_6 + 36\omega_{13}v_1^2 + 12\omega_{13}c_s^2 - 12c_s^2\omega_9 + 6c_s^2\omega_9\omega_6 - 6\omega_9\omega_6 - 36v_1^2\omega_9 + 12\omega_9 + 6\omega_{13}\omega_6 + 18v_1^2\omega_9\omega_6$

$C_3 = -3\omega_{13}c_s^2\omega_6^2 - \omega_{13}v_1^2\omega_6^2 + 3\omega_{13}v_1^2\omega_6 + 15\omega_{13}c_s^2\omega_6 - 12\omega_{13}c_s^2 - 6v_1^2\omega_6 - 3\omega_6^2 + \omega_{13}\omega_6^2 - 6c_s^2\omega_6 + 3c_s^2\omega_6^2 - 3\omega_{13}\omega_6 + 6\omega_6 + 3v_1^2\omega_6^2$

$C_4 = -12\omega_{16} + 12\omega_{10} + 36\omega_{16}c_s^2 - 36\omega_{10}c_s^2 - 12\omega_{10}v_2^2 + 6\omega_{16}\omega_7 - \omega_{16}\omega_{10}\omega_7 + 12\omega_{16}v_2^2 - 6\omega_{10}\omega_7 + \omega_{16}\omega_{10}v_2^2\omega_7 - 6\omega_{16}v_2^2\omega_7 +$

$3\omega_{16}\omega_{10}\omega_7 c_s^2 - 18\omega_{16}\omega_7 c_s^2 + 6\omega_{10}v_2^2\omega_7 + 18\omega_{10}\omega_7 c_s^2$

$C_5 = -12\omega_{16} + 12\omega_{10} + 12\omega_{16}c_s^2 - 12\omega_{10}c_s^2 - 36\omega_{10}v_2^2 + 6\omega_{16}\omega_7 - \omega_{16}\omega_{10}\omega_7 + 36\omega_{16}v_2^2 - 6\omega_{10}\omega_7 + 3\omega_{16}\omega_{10}v_2^2\omega_7 - 18\omega_{16}v_2^2\omega_7 + \omega_{16}\omega_{10}\omega_7 c_s^2 - 6\omega_{16}\omega_7 c_s^2 + 18\omega_{10}v_2^2\omega_7 + 6\omega_{10}\omega_7 c_s^2$

$C_6 = -12\omega_{16}c_s^2 + 6\omega_7 + \omega_{16}\omega_7^2 - 3\omega_{16}\omega_7 - 3\omega_{16}\omega_7^2 c_s^2 - 3\omega_7^2 + 3\omega_7^2 c_s^2 - 6v_2^2\omega_7 - 6\omega_7 c_s^2 + 3\omega_{16}v_2^2\omega_7 + 15\omega_{16}\omega_7 c_s^2 - \omega_{16}v_2^2\omega_7^2 + 3v_2^2\omega_7^2$

$C_7 = v_3^2\omega_{18}\omega_6 + v_3^2\omega_{11}\omega_{18} + v_3^2\omega_{11}^2\omega_6 - \omega_{18}\omega_6 - \omega_{11}\omega_{18} - \omega_{11}^2\omega_6 + 3c_s^2\omega_{11}\omega_{18} + 3c_s^2\omega_{18}\omega_6 + 3c_s^2\omega_{11}^2\omega_6 - v_3^2\omega_{11}^2 + \omega_{11}^2 - v_3^2\omega_{11}\omega_{18}\omega_6 + \omega_{11}\omega_{18}\omega_6 + \omega_{11}\omega_6 - 3c_s^2\omega_{11}^2 - 3c_s^2\omega_{11}\omega_6 - 3c_s^2\omega_{11}\omega_{18}\omega_6 - v_3^2\omega_{11}\omega_6$

$C_8 = -6\omega_{11}^2\omega_{18}\omega_6 - 3v_3^2\omega_{11}^2\omega_{18}\omega_6^2 - 12v_3^2\omega_{11}^2\omega_6 + 42c_s^2\omega_{11}^2\omega_{18}\omega_6 + 12\omega_{11}^2\omega_6 - 12c_s^2\omega_{11}^2\omega_6 + 36c_s^2\omega_{18}\omega_6^2 + 12c_s^2\omega_{11}^2\omega_6^2 - 11c_s^2\omega_{11}^2\omega_{18}\omega_6^2 - 12\omega_{18}\omega_6^2 - 12\omega_{11}^2\omega_6^2 + 12v_3^2\omega_{18}\omega_6^2 + 6v_3^2\omega_{11}^2\omega_{18}\omega_6 + 12v_3^2\omega_{11}^2\omega_6^2 + 3\omega_{11}^2\omega_{18}\omega_6^2 - 12v_3^2\omega_{11}\omega_6^2 - 18c_s^2\omega_{11}\omega_{18}\omega_6^2 - 12c_s^2\omega_{11}\omega_6^2 + 6\omega_{11}\omega_{18}\omega_6^2 + 12\omega_{11}\omega_6^2 - 6v_3^2\omega_{11}\omega_{18}\omega_6^2 - 24c_s^2\omega_{11}^2\omega_{18} - 24c_s^2\omega_{11}\omega_{18}\omega_6$

$C_9 = 3v_3^2\omega_{18}\omega_6 + 3v_3^2\omega_{11}\omega_{18} + 3v_3^2\omega_{11}^2\omega_6 - \omega_{18}\omega_6 - \omega_{11}\omega_{18} - \omega_{11}^2\omega_6 + c_s^2\omega_{11}\omega_{18} + c_s^2\omega_{18}\omega_6 + c_s^2\omega_{11}^2\omega_6 - 3v_3^2\omega_{11}^2 + \omega_{11}^2 - 3v_3^2\omega_{11}\omega_{18}\omega_6 + \omega_{11}\omega_{18}\omega_6 + \omega_{11}\omega_6 - c_s^2\omega_{11}^2 - c_s^2\omega_{11}\omega_6 - c_s^2\omega_{11}\omega_{18}\omega_6 - 3v_3^2\omega_{11}\omega_6$

$C_{10} = -v_3^2\omega_7\omega_{11} + \omega_7\omega_{11} + v_3^2\omega_7\omega_{19} - v_3^2\omega_{11}^2 - \omega_7\omega_{11}^2 + v_3^2\omega_7\omega_{11}^2 - \omega_7\omega_{19} - \omega_{11}\omega_{19} + \omega_{11}^2 + \omega_7\omega_{11}\omega_{19} + 3c_s^2\omega_{11}\omega_{19} - 3\omega_7 c_s^2\omega_{11}\omega_{19} - 3\omega_7 c_s^2\omega_{11} + v_3^2\omega_{11}\omega_{19} + 3\omega_7 c_s^2\omega_{11}^2 - 3c_s^2\omega_{11}^2 + 3\omega_7 c_s^2\omega_{19} - v_3^2\omega_7\omega_{11}\omega_{19}$

$C_{11} = 12\omega_7^2 c_s^2\omega_{11}^2 + 6v_3^2\omega_7\omega_{11}^2\omega_{19} + 36\omega_7^2 c_s^2\omega_{19} - 18\omega_7^2 c_s^2\omega_{11}\omega_{19} - 6v_3^2\omega_7^2\omega_{11}\omega_{19} + 42\omega_7 c_s^2\omega_{11}^2\omega_{19} + 6\omega_7^2\omega_{11}\omega_{19} + 12\omega_7\omega_{11}^2 - 12v_3^2\omega_7\omega_{11}^2 - 6\omega_7\omega_{11}^2\omega_{19} - 24c_s^2\omega_{11}^2\omega_{19} - 12\omega_7^2 c_s^2\omega_{11} + 12v_3^2\omega_7^2\omega_{11}^2 - 12\omega_7^2\omega_{19} + 12v_3^2\omega_7^2\omega_{19} - 24\omega_7 c_s^2\omega_{11}\omega_{19} - 12\omega_7^2\omega_{11}^2 + 3\omega_7^2\omega_{11}^2\omega_{19} - 12\omega_7 c_s^2\omega_{11}^2 + 12\omega_7^2\omega_{11} - 11\omega_7^2 c_s^2\omega_{11}^2\omega_{19} - 3v_3^2\omega_7^2\omega_{11}^2\omega_{19} - 12v_3^2\omega_7^2\omega_{11}$

$C_{12} = -3v_3^2\omega_7\omega_{11} + \omega_7\omega_{11} + 3v_3^2\omega_7\omega_{19} - 3v_3^2\omega_{11}^2 - \omega_7\omega_{11}^2 + 3v_3^2\omega_7\omega_{11}^2 - \omega_7\omega_{19} - \omega_{11}\omega_{19} + \omega_{11}^2 + \omega_7\omega_{11}\omega_{19} + c_s^2\omega_{11}\omega_{19} - \omega_7 c_s^2\omega_{11}\omega_{19} - \omega_7 c_s^2\omega_{11} + 3v_3^2\omega_{11}\omega_{19} + \omega_7 c_s^2\omega_{11}^2 - c_s^2\omega_{11}^2 + \omega_7 c_s^2\omega_{19} - 3v_3^2\omega_7\omega_{11}\omega_{19}$

$C_{13} =$
$-12c_s^4\omega_{11} - 36v_3^2 + 36v_3^2\omega_{11} - 12c_s^2 - 7v_3^2\omega_{11}^2 + c_s^4\omega_{11}^2 + 144v_3^2c_s^2 + 12c_s^4 - 144v_3^2c_s^2\omega_{11} - 36v_3^4\omega_{11} + 12c_s^2\omega_{11} - c_s^2\omega_{11}^2 + 36v_3^4 + 24v_3^2c_s^2\omega_{11}^2 + 7v_3^4\omega_{11}^2$

$C_{14} = 24v_1^2\omega_9^2\omega_6 - 48\omega_{13}v_1^4\omega_9\omega_6 - 24c_s^4\omega_9^2\omega_6 + 48\omega_{13}^2v_1^4\omega_9 + \omega_{13}^2c_s^2\omega_9^2\omega_6^2 + 24\omega_{13}^2c_s^4\omega_6 + 150\omega_{13}^2v_1^2c_s^2\omega_9\omega_6^2 - 3\omega_{13}^2v_1^4\omega_9^2\omega_6^2 - 216\omega_{13}v_1^2c_s^2\omega_9^2 + 48\omega_{13}v_1^2\omega_9^2 + 24\omega_{13}^2c_s^4\omega_9 + 72\omega_{13}^2v_1^4\omega_6 - 12c_s^2\omega_9^2\omega_6^2 + 24\omega_{13}c_s^2\omega_9^2 - 24\omega_{13}v_1^2\omega_9\omega_6^2 + 12v_1^4\omega_9^2\omega_6^2 + 72\omega_{13}v_1^2c_s^2\omega_9\omega_6^2 + 24c_s^2\omega_9^2\omega_6 - 24v_1^4\omega_9^2\omega_6 + 48\omega_{13}v_1^2\omega_9\omega_6 + 3\omega_{13}^2v_1^2\omega_9^2\omega_6^2 - 144\omega_{13}v_1^2c_s^2\omega_9\omega_6 - \omega_{13}^2c_s^4\omega_9^2\omega_6^2 - 36\omega_{13}^2v_1^4\omega_6^2 + 24\omega_{13}v_1^4\omega_9\omega_6^2 - 12v_1^2\omega_9^2\omega_6^2 + 12c_s^4\omega_9^2\omega_6^2 - 12\omega_{13}^2c_s^4\omega_6^2 - 432\omega_{13}^2v_1^2c_s^2\omega_9\omega_6 - 24\omega_{13}^2c_s^2\omega_9 - 72\omega_{13}^2v_1^2\omega_6 + 12\omega_{13}c_s^2\omega_9^2\omega_6^2 - 24\omega_{13}c_s^4\omega_9^2 - 30\omega_{13}v_1^4\omega_9^2\omega_6^2 - 96\omega_{13}^2v_1^4\omega_9\omega_6 + 72v_1^2c_s^2\omega_9^2\omega_6^2 + 48\omega_{13}^2c_s^2\omega_9\omega_6 - 96\omega_{13}v_1^2\omega_9^2\omega_6 + 48\omega_{13}c_s^4\omega_9^2\omega_6 + 14\omega_{13}^2c_s^4\omega_9\omega_6^2 - 48\omega_{13}^2v_1^2\omega_9 + 432\omega_{13}v_1^2c_s^2\omega_9^2\omega_6 - 36\omega_{13}^2v_1^2\omega_9\omega_6^2 - 144\omega_{13}^2v_1^2c_s^2\omega_6^2 - 24\omega_{13}^2c_s^2\omega_6 - 48\omega_{13}v_1^4\omega_9^2 + 30\omega_{13}v_1^2\omega_9^2\omega_6^2 - 12\omega_{13}c_s^4\omega_9^2\omega_6^2 - 126\omega_{13}v_1^2c_s^2\omega_9^2\omega_6^2 - 48\omega_{13}^2c_s^4\omega_9\omega_6 + 12\omega_{13}^2c_s^2\omega_6^2 + 288\omega_{13}^2v_1^2c_s^2\omega_6 + 96\omega_{13}^2v_1^2\omega_9\omega_6 - 48\omega_{13}c_s^2\omega_9^2\omega_6 + 96\omega_{13}v_1^4\omega_9^2\omega_6 - 144v_1^2c_s^2\omega_9^2\omega_6 + 36\omega_{13}^2v_1^4\omega_9\omega_6^2 - 12\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6^2 - 14\omega_{13}^2c_s^2\omega_9\omega_6^2 + 216\omega_{13}^2v_1^2c_s^2\omega_9 + 36\omega_{13}^2v_1^2\omega_6^2$

$C_{15} = -48v_1^2\omega_9^2\omega_6 - 24\omega_{13}c_s^2\omega_9\omega_6 - 3\omega_{13}^2c_s^2\omega_9^2\omega_6^2 - 12\omega_{13}\omega_9\omega_6^2 - 36\omega_{13}^2\omega_9 - 84\omega_{13}v_1^2\omega_9^2 - 12\omega_9^2\omega_6^2 + 24c_s^2\omega_9^2\omega_6^2 - 60\omega_{13}c_s^2\omega_9^2 + 36\omega_{13}v_1^2\omega_9\omega_6^2 - 48\omega_{13}^2\omega_6 + 2\omega_{13}^2\omega_9^2\omega_6^2 - 48c_s^2\omega_9^2\omega_6 + 24\omega_{13}^2\omega_6^2 - 72\omega_{13}v_1^2\omega_9\omega_6 - 5\omega_{13}^2v_1^2\omega_9^2\omega_6^2 + 24\omega_9^2\omega_6 + 24\omega_{13}\omega_9\omega_6 + 24v_1^2\omega_9^2\omega_6^2 + 12\omega_{13}c_s^2\omega_9\omega_6^2 - 72\omega_{13}\omega_9^2\omega_6 + 36\omega_{13}\omega_9^2 + 60\omega_{13}^2c_s^2\omega_9 + 120\omega_{13}^2v_1^2\omega_6 - 33\omega_{13}c_s^2\omega_9^2\omega_6^2 - 120\omega_{13}^2c_s^2\omega_9\omega_6 + 168\omega_{13}v_1^2\omega_9^2\omega_6 + 84\omega_{13}^2v_1^2\omega_9 + 61\omega_{13}^2v_1^2\omega_9\omega_6^2 + 72\omega_{13}^2c_s^2\omega_6 + 72\omega_{13}^2\omega_9\omega_6 - 51\omega_{13}v_1^2\omega_9^2\omega_6^2 - 25\omega_{13}^2\omega_9\omega_6^2 - 36\omega_{13}^2c_s^2\omega_6^2 - 168\omega_{13}^2v_1^2\omega_9\omega_6 + 120\omega_{13}c_s^2\omega_9^2\omega_6 + 39\omega_{13}^2c_s^2\omega_9\omega_6^2 + 21\omega_{13}\omega_9^2\omega_6^2 - 60\omega_{13}^2v_1^2\omega_6^2$

$C_{16} = -48\omega_{13}^2c_s^4\omega_6 + 24\omega_{13}c_s^2\omega_6^2 - 12\omega_{13}v_1^2c_s^2\omega_6^3 + 18\omega_{13}v_1^2\omega_6^3 - 96\omega_{13}^2v_1^2c_s^2 + 24\omega_{13}^2v_1^4\omega_6 - 72\omega_{13}v_1^2\omega_6^2 + 48\omega_{13}v_1^2c_s^2\omega_6^2 - 6\omega_{13}c_s^2\omega_6^3 + 48\omega_{13}v_1^2\omega_6 + 24\omega_{13}^2c_s^4 - 24v_1^4\omega_6^2 - 24\omega_{13}v_1^2c_s^2\omega_6 - 3\omega_{13}^2c_s^4\omega_6^3 - 24\omega_{13}^2v_1^4\omega_6^2 - 24\omega_{13}c_s^2\omega_6 + 12v_1^4\omega_6^3 + 3\omega_{13}^2v_1^4\omega_6^3 + 24\omega_{13}^2c_s^4\omega_6^2 + 6\omega_{13}^2v_1^2c_s^2\omega_6^3 - 24\omega_{13}^2v_1^2\omega_6 + 72\omega_{13}v_1^4\omega_6^2 - 24v_1^2c_s^2\omega_6^2 + 6\omega_{13}c_s^4\omega_6^3 - 72\omega_{13}^2v_1^2c_s^2\omega_6^2 + 12\omega_{13}^2c_s^2\omega_6 - 24\omega_{13}c_s^4\omega_6^2 + 12v_1^2c_s^2\omega_6^3 - 18\omega_{13}v_1^4\omega_6^3 + 24\omega_{13}c_s^4\omega_6 - 12v_1^2\omega_6^3 - 3\omega_{13}^2v_1^2\omega_6^3 - 8\omega_{13}^2c_s^2\omega_6^2 + 156\omega_{13}^2v_1^2c_s^2\omega_6 - 48\omega_{13}v_1^4\omega_6 + 24v_1^2\omega_6^2 + \omega_{13}^2c_s^2\omega_6^3 + 24\omega_{13}^2v_1^2\omega_6^2$

$C_{17} = 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7c_s^2\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7v_1^2\omega_5\omega_9^2\omega_{12}\omega_6 - 3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}^2v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_6^2 + 2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_6^2 + 4\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 24\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 - 8\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 - 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2 - 8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 + 2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9^2\omega_6 + 4\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9^2\omega_6 - 4\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 - 6\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9^2\omega_6^2 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9^2\omega_6^2 + 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 - 4\omega_{13}^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 + 3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_6^2 + 3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 + 9\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6 + 8\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7c_s^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7v_1^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_6 - 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_6 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 + 6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 + 4\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 + 4\omega_{13}^2v_1^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2c_s^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2\omega_6^2 - 12\omega_{13}^2\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^2\omega_6^2 - 4\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^2\omega_6^2 + 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 4\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 + 2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 6\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_6^2 - 12\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6 - 4\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 6\omega_{13}^2\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2c_s^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2v_1^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 -$

$2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6 - 9\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 - 3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 12\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 +$
$4\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2\omega_6 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 - 4\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 -$
$12\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 24\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 8\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}$

$C_{18} = 12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7c_s^2\omega_5\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7v_1^2\omega_5\omega_9^2\omega_{12}\omega_6 - 3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 -$
$6\omega_{13}^2v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_6^2 + 6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_6^2 + 4\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 -$
$8\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 - 24\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 - 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2 - 6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6^2 -$
$8\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 + 6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 -$
$12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9^2\omega_6 + 12\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 -$
$4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9^2\omega_6 - 12\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 -$
$2\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9^2\omega_6^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9^2\omega_6^2 +$
$12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 - 4\omega_{13}^2\omega_5\omega_9^2\omega_{12}\omega_6^2 +$
$4\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 + 3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_6^2 +$
$9\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 + 3\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6 +$
$8\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7c_s^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7v_1^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_6 - 12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_6 +$
$4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 -$
$2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 + 12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6 + 12\omega_{13}^2v_1^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 4\omega_{13}^2c_s^2\omega_5\omega_9^2\omega_{12}\omega_6^2 +$
$2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2\omega_6^2 - 4\omega_{13}^2\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^2\omega_6^2 -$
$12\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^2\omega_6^2 + 4\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 12\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6^2 +$
$4\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 + 2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 + 6\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 +$
$2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_6^2 - 4\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12}\omega_6 - 12\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 +$
$4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_6 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}^2\omega_7v_1^2\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 -$
$4\omega_{13}^2c_s^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}^2v_1^2\omega_{14}\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 -$
$6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12}\omega_6 - 3\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 - 9\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_6^2 + 4\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 +$
$12\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2\omega_6 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12}\omega_6 - 12\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 -$
$4\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 8\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 + 24\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}$

$C_{19} = -6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 36\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6 + 12\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6 -$
$6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 - 12\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 18\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6 - 12\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 -$
$6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 18\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 - 6\omega_{13}\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 54\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 -$
$12\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 - 42\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 +$
$3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6 - 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 +$
$12\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 18\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 +$
$6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 12\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 +$
$12\omega_{13}\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 4\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 24\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 + 6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 24\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6^2 -$
$4\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 9\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 + 54\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 + 6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 -$
$12\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 - 9\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 - 9\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 - 6\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 -$
$12\omega_{13}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7^2v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 18\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2 + 12\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 +$
$6\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2 + 6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2 + 6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 + 42\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 +$
$12\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 3\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + \omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 12\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}\omega_6^2 -$
$12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 - 36\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}\omega_6^2 + 24\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6^2 +$
$30\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 24\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - \omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 +$
$6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 + 6\omega_{13}^2\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 6\omega_{13}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 - 18\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6^2 -$
$9\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 - 3\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 + 12\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 -$
$24\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6 + 6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_6^2 - 12\omega_{13}^2\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 +$
$18\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6^2 + 54\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6 +$
$36\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6 - 12\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6 - 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 6\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6^2 +$
$12\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2 + 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_6 + 36\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 -$
$6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 24\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}\omega_6 - 54\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}\omega_6 -$
$12\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6 - 12\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6 + 6\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 -$
$12\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7^2v_1^2\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6 - 12\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 -$
$36\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}\omega_6 + 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6 - 6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}\omega_6^2 - 24\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 12\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}\omega_6^2$

$C_{20} = \omega_{13}^2\omega_7^2c_s^2\omega_8^2\omega_6^3 + 2\omega_{13}^2\omega_7^2\omega_8^2\omega_6^2 - 2\omega_{13}^2\omega_7\omega_8\omega_6^3 + 2\omega_7^2\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{13}\omega_7^2c_s^2\omega_8^2\omega_6^2 + 2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_6^3 - \omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_6 +$
$7\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_6^3 - \omega_{13}^2\omega_7^2\omega_8^2\omega_6^3 + 2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6 - 2\omega_{13}^2\omega_7^2c_s^2\omega_8^2\omega_6^2 - 5\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^2 - \omega_{13}\omega_7^2c_s^2\omega_8^2\omega_6^3 - \omega_7^2\omega_{14}\omega_8^2\omega_6^3 -$
$2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6 + 2\omega_{13}^2\omega_7v_1^2\omega_8\omega_6^3 + \omega_{13}^2\omega_7\omega_{14}\omega_8\omega_6^3 + \omega_{13}^2\omega_7v_1^2\omega_8^2\omega_6^3 - \omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_6^2 + 4\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^2 - 2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_6^2 +$
$\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_6^3 - \omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_6^3 + 2\omega_{13}\omega_7^2v_1^2\omega_8^2\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6^2 + 13\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_6 + \omega_7^2v_1^2\omega_{14}\omega_8^2\omega_6^3 + \omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_6^3 -$
$\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3 + \omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_6^2 - 2\omega_{13}^2\omega_7^2v_1^2\omega_8^2\omega_6^2 - 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_6 - \omega_{13}\omega_7^2v_1^2\omega_8^2\omega_6^3 + \omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6^3 - 2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_6^2 +$
$2\omega_{13}^2\omega_7c_s^2\omega_8\omega_6^3 - 2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_6^3 + 2\omega_{13}^2\omega_7^2v_1^2\omega_8\omega_6^2 + \omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_6^2 - 2\omega_{13}\omega_7^2\omega_8^2\omega_6^2 + \omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_6^2 - \omega_{13}^2\omega_7c_s^2\omega_8^2\omega_6^3 - 2\omega_{13}^2\omega_7^2v_1^2\omega_8\omega_6^3 -$
$\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_6^3 - \omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_6^2 - 2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_6 + 6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_6 + \omega_{13}\omega_7^2\omega_8^2\omega_6^3 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_6^2 +$
$2\omega_{13}^2\omega_7^2\omega_8\omega_6^3 - 11\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_6^2 + 4\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_6^2 - 2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{13}^2\omega_7^2c_s^2\omega_8\omega_6^2 + \omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_6^3 - 7\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_6^3 +$
$\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_6 - \omega_{13}^2\omega_7v_1^2\omega_8^2\omega_6^3 - 2\omega_{13}^2\omega_7^2c_s^2\omega_8\omega_6^3 + \omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3 + 5\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_6^3 - \omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_6^3 + \omega_{13}^2\omega_7\omega_8^2\omega_6^3 -$
$8\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2 - 2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_6^2 - 2\omega_{13}^2\omega_7^2\omega_8\omega_6^2 - \omega_{13}\omega_7\omega_{14}\omega_8^2\omega_6^3 - \omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_6^2 - 2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_6^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_6^2$

$C_{21} = 12\omega_7^2\omega_8\omega_5^2\omega_6^2 + 12\omega_7^2\omega_8^2\omega_6^2 + 12\omega_7\omega_5^2\omega_6^2 - 14\omega_7^2\omega_8^2\omega_5\omega_6^2 - 12\omega_7^2\omega_8^2\omega_6 + 24\omega_7^2\omega_8^2\omega_5\omega_6 - 24\omega_7^2\omega_8\omega_5^2\omega_6 + 12\omega_7^2\omega_8\omega_5^2 - 24\omega_7\omega_8\omega_5^2\omega_6^2 + 12\omega_7^2\omega_5^2\omega_6 - 12\omega_8^2\omega_5\omega_6^2 + 24\omega_7\omega_8^2\omega_5\omega_6^2 + 12\omega_8\omega_5^2\omega_6^2 + \omega_7^2\omega_8^2\omega_5^2\omega_6^2 - 12\omega_7^2\omega_8^2\omega_5 - 12\omega_7\omega_8^2\omega_6^2 - 12\omega_7^2\omega_5^2\omega_6^2$

$C_{22} = 4\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_6^2 + 6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2 - 2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6 + 3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_6^2 - 2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 - 3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2 - 2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_6 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6 - 2\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_6^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 4\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6^2 + 2\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6^2 - 2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6 + 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}\omega_6^2 + 2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}\omega_6 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6^2 - 4\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}\omega_6 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_9\omega_{12}\omega_6^2 - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}\omega_6 + 4\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12}\omega_6 + 2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_6^2 - 4\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9\omega_{12}\omega_6 + 2\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9\omega_{12}\omega_6 - 4\omega_{13}\omega_7\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2 + 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_6$

$C_{23} = -2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6 + 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + 4\omega_{16}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2 + 2\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2 + 4\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6 + 3\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - 2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - 4\omega_{16}\omega_{10}\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_{15}\omega_6^2 - 4\omega_{10}\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6^2 - 6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_6^2 + 2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 3\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_5^2\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}\omega_7\omega_8\omega_5^2\omega_{15}\omega_6^2 - 4\omega_{16}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_5^2\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6 + 2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}\omega_6^2 + 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 - 4\omega_{16}\omega_{10}\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6$

$C_{24} = -\omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_6^3 - 2\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_6^3 - \omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8\omega_6^3 - 2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_6^3 + 2\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6^3 - 6\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_6^3 - 2\omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8\omega_6^2 + \omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 4\omega_{16}v_2^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_6^3 + v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_6^3 + 2\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_6^2 + 2\omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_6^2 + 2\omega_{16}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3 + 2\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_6^2 + 2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{16}\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8\omega_6^3 + 2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_6^2 - 2\omega_{16}\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8\omega_6^3 - 2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_6^3 - 2\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_8\omega_6^2 - \omega_{16}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3 - \omega_{16}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3 + \omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_6^2 - 2\omega_{16}\omega_7^3v_1^2\omega_{17}\omega_8^2\omega_6^2 - \omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{16}\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_6^3 - 4\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_6^3 + 2\omega_{16}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{16}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_8\omega_6^3 - 2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3 - 2\omega_{16}\omega_{13}v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3 + 2\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_6^2 + 2v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 - 2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 + \omega_{16}\omega_7^3v_1^2\omega_{17}\omega_8^2\omega_6^3 + 3\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_6 + 2\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_6^3 - \omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_6^3 - \omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_8^2\omega_6^3 - \omega_{13}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 4\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 - 6\omega_{16}\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8\omega_6^3 + 2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_6 - 2\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6 - v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_8^2\omega_6^2 + 4\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_8\omega_6 - 2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8\omega_6^2 + \omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_6^3 - 2\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8\omega_6^3 - \omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3 + \omega_{16}\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3 + 2\omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8\omega_6^2 - 6\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_8\omega_6^2 + 2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_6^3 + \omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_6^2 - 2\omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_8\omega_6^2 + 4\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 - 2\omega_{16}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_6^3 - 2\omega_{16}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_6^2 + \omega_{16}\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_6^3 + 3\omega_{16}\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3 - \omega_{16}\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^3 + 2\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_6^3 - 4\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_6 + 2\omega_{16}\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6 - 4\omega_{16}v_2^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_8\omega_6^3 - \omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2\omega_6^3 - 4\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_6^2 - 2\omega_{16}\omega_{13}\omega_7^3c_s^2\omega_{17}\omega_{14}\omega_8\omega_6^3 + 2\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_8\omega_6^3 - 2\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_6^3 - 2\omega_{16}\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + 2\omega_{16}\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_6^2 + \omega_{16}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_6^3$

$C_{25} = -4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}\omega_6 - 24\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_6 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 + 4\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_6 + 4\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_{15}\omega_6 + 2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15}\omega_6 + 8\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_5\omega_{15} - 2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_6 - 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_6 - 2\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5\omega_{15} - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 6\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_6 + 2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_6 - 4\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_5\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15}\omega_6 + 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 - 8\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15}\omega_6 - 9\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_6 - 6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_6 - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15}\omega_6 + 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 + 12\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_6 + 24\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 8\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 + 12\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 9\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_6 - 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_5\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_{15} - 12\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8 - 4\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_6 - 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_6 - 8\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_6 + 3\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8 + 4\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}$

$C_{26} = 18\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 18\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_6^2 - 6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}\omega_6^2 + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6 - 12\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_6^2 - 54\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$

$12\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2 -$
$54\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}\omega_6^2 + 6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + 6\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 -$
$\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6^2 - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}\omega_{10}^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6 + 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - 9\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$24\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - 18\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}\omega_6^2 -$
$12\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 -$
$9\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - 6\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 3\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_6 - 12\omega_{16}^2\omega_{10}\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$54\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_6^2 + 6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}\omega_6 +$
$3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6^2 -$
$6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 -$
$42\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6^2 + 18\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2 +$
$54\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 36\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 +$
$12\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - 6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 3\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 +$
$6\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 24\omega_{16}^2\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 - 36\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 +$
$6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 + 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 24\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6 - 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 -$
$6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 36\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_6^2 -$
$18\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - 24\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}\omega_6 + 42\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 +$
$6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}\omega_6 - 18\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 + 24\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}\omega_6^2 -$
$36\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 + 12\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 9\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 +$
$4\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2 + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 + 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2\omega_{15}\omega_6 +$
$30\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_6^2 -$
$24\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_{15}\omega_6^2 - 24\omega_{16}^2\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_6 +$
$36\omega_{16}^2\omega_{10}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2 + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6 + 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}\omega_6^2 - 9\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^2 - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_6^2$

$C_{27} = -4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}\omega_6 - 8\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_6 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 +$
$12\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_6 + 12\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_{15}\omega_6 +$
$6\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_5\omega_{15} - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15} - 12\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15}\omega_6 + 12\omega_{16}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 -$
$2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15}\omega_6 + 24\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_5\omega_{15} -$
$2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_6 - 9\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_6 - 6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$4\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}\omega_6 - 6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_5\omega_{15}\omega_6 +$
$12\omega_{16}^2\omega_{10}v_2^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 6\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_5\omega_{15}\omega_6 - 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5\omega_{15} -$
$4\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6 +$
$6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_6 - 4\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 2\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 -$
$2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_6 + 2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_6 - 12\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_5\omega_{15}\omega_6 + 12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} +$
$4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6 +$
$4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15} - 4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 24\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15}\omega_6 -$
$3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_6 - 2\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_6 - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_6 +$
$4\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_5\omega_{15}\omega_6 + 2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 + 4\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 -$
$4\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_5\omega_{15}\omega_6 + 8\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 8\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 -$
$6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_6 + 4\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_6 + 4\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$3\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_6 - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 12\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_{15} -$
$4\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}\omega_6 + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 4\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_{15}\omega_6 - 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8 -$
$4\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_6 - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_6 - 8\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 4\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 +$
$6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_6 + 9\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8 + 4\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 + 2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}$

$C_{28} = -2\omega_{16}^2\omega_7^2\omega_8\omega_6^2 + 2\omega_{16}^2\omega_7^3c_s^2\omega_8\omega_6 + v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_6^2 + \omega_{16}\omega_7^3\omega_{17}\omega_8^2\omega_6^2 + 4\omega_{16}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_6^2 + 2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_6 + 7\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_6 +$
$2\omega_{16}^2\omega_7^2c_s^2\omega_8\omega_6^2 - \omega_{16}^2v_2^2\omega_7^3\omega_8^2\omega_6 - \omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_6^2 - \omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_6 - 7\omega_{16}^2\omega_7^3c_s^2\omega_{17}\omega_8\omega_6 + \omega_{16}^2\omega_7^3\omega_8^2\omega_6 - 2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_6^2 -$
$6\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_6 - \omega_{16}v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_6^2 - 2\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_6 + 2\omega_{16}^2v_2^2\omega_7^2\omega_8\omega_6^2 - 2\omega_{16}\omega_7c_s^2\omega_{17}\omega_8^2\omega_6^2 + 4\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_6^2 + \omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_6^2 +$
$5\omega_{16}^2\omega_7^3c_s^2\omega_{17}\omega_8\omega_6^2 - \omega_{16}^2\omega_7^3\omega_8^2\omega_6^2 + \omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_6 + 13\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_6^2 + \omega_{16}v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_6 - \omega_{16}v_2^2\omega_7^3\omega_8^2\omega_6^2 - 4\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_6^2 -$
$5\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_6^2 - 2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_6^2 + \omega_{16}^2v_2^2\omega_7^3\omega_8^2\omega_6^2 - 2\omega_{16}^2\omega_7^3c_s^2\omega_8\omega_6^2 - \omega_{16}\omega_7^3\omega_{17}\omega_8^2\omega_6 - 2\omega_{16}\omega_7^2\omega_8^2\omega_6^2 - 2\omega_{16}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_6 -$
$2\omega_{16}^2v_2^2\omega_7^3\omega_8\omega_6^2 + 2\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_6^2 - 11\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_6^2 + \omega_{16}^2\omega_7^3c_s^2\omega_8^2\omega_6^2 + 2\omega_{16}^2\omega_7^3c_s^2\omega_{17}\omega_6 - \omega_7^3\omega_{17}\omega_8^2\omega_6^2 - \omega_{16}\omega_7^3c_s^2\omega_8^2\omega_6^2 +$
$\omega_{16}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_6 + \omega_{16}^2\omega_7^3\omega_{17}\omega_8\omega_6 + \omega_{16}^2v_2^2\omega_7^3\omega_{17}\omega_8\omega_6^2 + \omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_6^2 + 2\omega_{16}^2\omega_7^3\omega_8\omega_6^2 + 6\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8\omega_6^2 + \omega_{16}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_6^2 -$
$2\omega_{16}^2\omega_7^3\omega_8\omega_6 - \omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_6^2 - 2\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8^2 - \omega_{16}^2\omega_7\omega_{17}\omega_8^2\omega_6^2 + \omega_{16}\omega_7^3\omega_8^2\omega_6^2 + 2\omega_{16}\omega_7^2c_s^2\omega_8^2\omega_6^2 - \omega_{16}\omega_7^3c_s^2\omega_{17}\omega_8^2\omega_6^2 - 8\omega_{16}^2c_s^2\omega_{17}\omega_8^2\omega_6^2 +$
$2\omega_{16}^2\omega_7^3c_s^2\omega_{17}\omega_8 - 2\omega_{16}v_2^2\omega_7\omega_{17}\omega_8^2\omega_6^2 - 2\omega_{16}^2v_2^2\omega_7^2\omega_8^2\omega_6^2 - \omega_{16}^2v_2^2\omega_7^3\omega_{17}\omega_8\omega_6 - \omega_{16}^2\omega_7^3\omega_{17}\omega_8\omega_6^2 - 2\omega_{16}^2\omega_7^3c_s^2\omega_{17}\omega_6^2 + 2\omega_{16}^2\omega_7^2\omega_8^2\omega_6^2 -$
$\omega_{16}^2\omega_7^3c_s^2\omega_8^2\omega_6 + 2\omega_{16}v_2^2\omega_7^2\omega_8^2\omega_6^2 + 2\omega_7^2\omega_{17}\omega_8^2\omega_6^2 + 2\omega_{16}^2v_2^2\omega_7^3\omega_8\omega_6 + \omega_7^3c_s^2\omega_{17}\omega_8^2\omega_6^2 - 2\omega_{16}^2\omega_7^2c_s^2\omega_8^2\omega_6^2 + 4\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_6 + 2\omega_{16}\omega_7\omega_{17}\omega_8^2\omega_6^2$

$C_{29} = -144\omega_{16}^2v_2^2\omega_7^2c_s^2 - 126\omega_{16}\omega_{10}^2v_2^2\omega_7^2c_s^2 + 12\omega_{10}^2\omega_7^2c_s^4 + \omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 48\omega_{16}\omega_{10}v_2^4\omega_7 + 24\omega_{16}^2\omega_{10}c_s^4 + 30\omega_{16}\omega_{10}^2v_2^2\omega_7^2 + 36\omega_{16}^2v_2^2\omega_7^2 +$
$14\omega_{16}^2\omega_{10}\omega_7^2c_s^4 - 216\omega_{16}\omega_{10}^2v_2^2c_s^2 - 3\omega_{16}^2\omega_{10}^2v_2^4\omega_7^2 + 48\omega_{16}^2\omega_{10}\omega_7c_s^2 + 24\omega_{10}^2v_2^2\omega_7 - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2c_s^2 + 96\omega_{16}^2\omega_{10}v_2^2\omega_7 + 24\omega_{10}^2\omega_7c_s^2 - 24\omega_{16}\omega_{10}^2c_s^4 -$
$36\omega_{16}^2\omega_{10}v_2^2\omega_7^2 - 432\omega_{16}^2\omega_{10}v_2^2\omega_7c_s^2 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^4 - 12\omega_{16}^2\omega_7^2c_s^4 - 48\omega_{16}\omega_{10}^2v_2^4 - 12\omega_{10}^2v_2^2\omega_7^2 - 72\omega_{16}^2v_2^2\omega_7 - 96\omega_{16}\omega_{10}^2v_2^2\omega_7 - 144\omega_{10}^2v_2^2\omega_7c_s^2 +$
$216\omega_{16}^2\omega_{10}v_2^2c_s^2 - 24\omega_{16}^2\omega_7c_s^2 - 48\omega_{16}\omega_{10}^2\omega_7c_s^2 + 24\omega_{16}\omega_{10}v_2^4\omega_7^2 - 144\omega_{16}\omega_{10}v_2^2\omega_7c_s^2 + 48\omega_{16}^2\omega_{10}v_2^4 + 48\omega_{16}\omega_{10}^2v_2^2 - 24\omega_{10}^2v_2^4\omega_7 + 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2 -$
$96\omega_{16}^2\omega_{10}v_2^4\omega_7 + 72\omega_{10}^2v_2^2\omega_7^2c_s^2 + 72\omega_{16}\omega_{10}v_2^2\omega_7^2c_s^2 + 12\omega_{16}^2\omega_7^2c_s^2 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2 + 48\omega_{16}\omega_{10}v_2^2\omega_7 + 150\omega_{16}^2\omega_{10}v_2^2\omega_7^2c_s^2 + 48\omega_{16}\omega_{10}^2\omega_7c_s^4 +$

$24\omega_{16}^2\omega_7c_s^4 - 48\omega_{16}^2\omega_{10}v_2^2 - 30\omega_{16}\omega_{10}^2v_2^4\omega_7^2 - 36\omega_{16}^2v_2^4\omega_7^2 - 24\omega_{16}^2\omega_{10}c_s^2 + 72\omega_{16}^2v_2^4\omega_7 + 96\omega_{16}\omega_{10}^2v_2^4\omega_7 - 14\omega_{16}^2\omega_{10}\omega_7^2c_s^2 - 12\omega_{10}^2\omega_7^2c_s^2 - \omega_{16}^2\omega_{10}^2\omega_7^2c_s^4 - 24\omega_{16}\omega_{10}v_2^2\omega_7^2 + 36\omega_{16}^2\omega_{10}v_2^4\omega_7^2 - 24\omega_{10}^2\omega_7c_s^4 + 432\omega_{16}\omega_{10}^2v_2^2\omega_7c_s^2 + 288\omega_{16}^2v_2^2\omega_7c_s^2 + 24\omega_{16}\omega_{10}^2c_s^2 - 48\omega_{16}^2\omega_{10}\omega_7c_s^4 + 12\omega_{10}^2v_2^4\omega_7^2$

$C_{30} = -3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2 - 51\omega_{16}\omega_{10}^2v_2^2\omega_7^2 - 60\omega_{16}^2v_2^2\omega_7^2 - 120\omega_{16}^2\omega_{10}\omega_7c_s^2 - 48\omega_{10}^2v_2^2\omega_7 - 168\omega_{16}^2\omega_{10}v_2^2\omega_7 - 48\omega_{10}^2\omega_7c_s^2 - 12\omega_{16}\omega_{10}\omega_7^2 + 61\omega_{16}^2\omega_{10}v_2^2\omega_7^2 + 24\omega_{16}\omega_{10}\omega_7 + 12\omega_{16}\omega_{10}\omega_7^2c_s^2 + 24\omega_{10}^2v_2^2\omega_7^2 + 36\omega_{16}\omega_{10}^2 + 120\omega_{16}^2v_2^2\omega_7 + 168\omega_{16}\omega_{10}^2v_2^2\omega_7 + 72\omega_{16}^2\omega_7c_s^2 + 120\omega_{16}\omega_{10}^2\omega_7c_s^2 + 72\omega_{16}^2\omega_{10}\omega_7 - 84\omega_{16}\omega_{10}^2v_2^2 - 5\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2 + 24\omega_{10}^2\omega_7 - 36\omega_{16}^2\omega_7^2c_s^2 - 33\omega_{16}\omega_{10}^2\omega_7^2c_s^2 - 72\omega_{16}\omega_{10}v_2^2\omega_7 - 72\omega_{16}\omega_{10}^2\omega_7 - 48\omega_{16}^2\omega_7 + 84\omega_{16}^2\omega_{10}v_2^2 - 24\omega_{16}\omega_{10}\omega_7c_s^2 + 60\omega_{16}^2\omega_{10}c_s^2 + 39\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 24\omega_{10}^2\omega_7^2c_s^2 + 21\omega_{16}\omega_{10}^2\omega_7^2 + 24\omega_{16}^2\omega_7^2 + 36\omega_{16}\omega_{10}v_2^2\omega_7^2 - 60\omega_{16}\omega_{10}^2c_s^2 - 25\omega_{16}^2\omega_{10}\omega_7^2 - 36\omega_{16}^2\omega_{10} - 12\omega_{10}^2\omega_7^2$

$C_{31} = -72\omega_{16}^2v_2^2\omega_7^2c_s^2 - 6\omega_{16}\omega_7^3c_s^2 - 48\omega_{16}v_2^4\omega_7 - 3\omega_{16}^2\omega_7^3c_s^4 + 24\omega_{16}^2v_2^2\omega_7^2 - 96\omega_{16}^2v_2^2c_s^2 + 24\omega_{16}^2c_s^4 - 3\omega_{16}^2v_2^2\omega_7^3 + 24\omega_{16}^2\omega_7^2c_s^4 + 24\omega_{16}\omega_7^2c_s^2 - 18\omega_{16}v_2^4\omega_7^3 + 6\omega_{16}^2v_2^2\omega_7^3c_s^2 - 24v_2^4\omega_7^2 - 24\omega_{16}^2v_2^2\omega_7 + 24\omega_{16}\omega_7c_s^4 + 12v_2^4\omega_7^3 + 12\omega_{16}^2\omega_7c_s^2 + 72\omega_{16}v_2^4\omega_7^2 - 24\omega_{16}v_2^2\omega_7c_s^2 - 24\omega_{16}\omega_7^2c_s^4 + 12v_2^2\omega_7^3c_s^2 + 3\omega_{16}^2v_2^4\omega_7^3 + 48\omega_{16}v_2^2\omega_7^2c_s^2 - 8\omega_{16}^2\omega_7^2c_s^2 + 48\omega_{16}v_2^2\omega_7 - 48\omega_{16}^2\omega_7c_s^4 - 24\omega_{16}\omega_7c_s^2 - 24\omega_{16}^2v_2^4\omega_7^2 - 12\omega_{16}v_2^2\omega_7^3c_s^2 + \omega_{16}^2\omega_7^3c_s^2 + 24\omega_{16}^2v_2^4\omega_7 - 24v_2^2\omega_7^2c_s^2 - 12v_2^2\omega_7^3 + 6\omega_{16}\omega_7^3c_s^4 - 72\omega_{16}v_2^2\omega_7^2 + 156\omega_{16}^2v_2^2\omega_7c_s^2 + 18\omega_{16}v_2^2\omega_7^3 + 24v_2^2\omega_7^2$

$C_{32} = -24\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 72\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 12\omega_{13}^2v_3^2\omega_9^2\omega_6^3 + 36\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 - 36\omega_{13}^2c_s^4\omega_{11}\omega_9\omega_6^2\omega_{22} - 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 36\omega_{13}^2v_3^2c_s^2\omega_9^2\omega_6^3 - 6\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + 36\omega_{13}^2c_s^4\omega_{11}\omega_9^2\omega_6^2 - 60\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 24\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 72\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 36\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 24\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 72\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}^2v_3^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_9^2\omega_6^3 - 24\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 36\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3 - 18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 12\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 6\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 24\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 18\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 36\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 36\omega_{13}^2v_3^2c_s^2\omega_9\omega_6^3\omega_{22} - 36\omega_{13}^2c_s^4\omega_{11}\omega_9^2\omega_6^3 + 12\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 12\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 36\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 3\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_9^2\omega_6^2 + 12\omega_{13}^2v_3^2v_1^2\omega_9^2\omega_6^3 - 12\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + 18\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_9^2\omega_6^2 + 72\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 24\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 36\omega_{13}^2c_s^4\omega_{11}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 36\omega_{13}^2c_s^4\omega_9^2\omega_6^3 - \omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + \omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_9^2\omega_6^3 - 96\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}^2c_s^2\omega_9\omega_6^3\omega_{22} + 18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_9^2\omega_6^3 - 36\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 24\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 36\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 6\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 3\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_9^2\omega_6^2 + 12\omega_{13}^2v_3^2v_1^2\omega_9^2\omega_6^3 - 12\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + 18\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_9^2\omega_6^2 + 72\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 24\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 36\omega_{13}^2c_s^4\omega_{11}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 36\omega_{13}^2c_s^4\omega_9^2\omega_6^3 - \omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + \omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_9^2\omega_6^3 - 96\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}^2c_s^2\omega_9\omega_6^3\omega_{22} + 18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_9^2\omega_6^3 - 36\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 24\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^2 - 12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 - 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^3$

$C_{33} = -72\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 24\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 12\omega_{13}^2v_3^2\omega_9^2\omega_6^3 + 12\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 36\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 - 12\omega_{13}^2c_s^4\omega_{11}\omega_9\omega_6^2\omega_{22} - 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}^2v_3^2c_s^2\omega_9^2\omega_6^3 - 18\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22} - 12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + 12\omega_{13}^2c_s^4\omega_{11}\omega_9^2\omega_6^2 - 5\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 36\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 72\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 24\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 72\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 24\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 36\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}^2v_3^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^2\omega_9^2\omega_6^3 - 24\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 6\omega_{13}^2v_3^2\omega_{18}\omega_9^2\omega_6^3 - 6\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 36\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 18\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 24\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 6\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 24\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} - 6\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 12\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 12\omega_{13}^2v_3^2c_s^2\omega_9\omega_6^3\omega_{22} - 12\omega_{13}^2c_s^4\omega_{11}\omega_9^2\omega_6^3 + 12\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + \omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 15\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 36\omega_{13}v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 18\omega_{13}^2v_3^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} - \omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 36\omega_{13}v_3^2v_1^2\omega_{11}\omega_9^2\omega_6^2 + 36\omega_{13}v_3^2v_1^2\omega_9^2\omega_6^3 + 60\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22} + 6\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 36\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_9^2\omega_6^2 + 24\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 72\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 12\omega_{13}^2c_s^4\omega_{11}\omega_9\omega_6^3\omega_{22} + 18\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2c_s^4\omega_9^2\omega_6^3 - 36\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_9^2\omega_6^3 - 12\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_{22} + 12\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}^2c_s^2\omega_9\omega_6^3\omega_{22} + 6\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 18\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 6\omega_{13}^2v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 36\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_9^2\omega_6^3 - 12\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 24\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2\omega_{11}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 5\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 6v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 15\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 9\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 36\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^2\omega_{22} + 36\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_{18}\omega_6^2\omega_{22} - 12\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^2 - 12\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 + 18v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 6v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 18\omega_{13}^2v_1^2c_s^2\omega_{18}\omega_9^2\omega_6^3 - 12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^2\omega_{22} - 15\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 5\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 102\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 6\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 36\omega_{13}^2v_1^2c_s^2\omega_9\omega_6^3\omega_{22} + 6\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 - 18\omega_{13}^2v_3^2v_1^2\omega_{18}\omega_9^2\omega_6^3 + 12\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^3 - 12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9\omega_6^2\omega_{22} - 36\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_9\omega_6^2\omega_{22} + 24v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 36\omega_{13}^2v_3^2v_1^2\omega_9\omega_6^3\omega_{22} - 45\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 15\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 36\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 108\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 18\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3 + 36\omega_{13}^2v_1^2c_s^2\omega_9^2\omega_6^3 - 18\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 6\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} + 36\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9^2\omega_6^2 - 12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2 -$

$36\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2-12\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^2-48\omega_{13}v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}+36\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}-6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3-12\omega_{13}^2v_3^2\omega_{11}\omega_9\omega_6^3\omega_{22}-$
$18\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}+60\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22}-12\omega_{13}v_3^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}+12v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}+18\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}-$
$6\omega_{13}^2c_s^2\omega_{18}\omega_9\omega_6^3\omega_{22}+6\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3+18\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3-12\omega_{13}^2c_s^4\omega_9\omega_6^3\omega_{22}+9\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}+$
$27\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}+144\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}+48\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}-12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9^2\omega_6^3-36\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2-$
$6\omega_{13}^2c_s^4\omega_{18}\omega_9^2\omega_6^3-12v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}+36\omega_{13}^2v_3^2v_1^2\omega_{11}\omega_9\omega_6^3\omega_{22}+12\omega_{13}^2v_3^2c_s^2\omega_{11}\omega_9\omega_6^3\omega_{22}+30\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}+$
$54\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}-18\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}+18\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}+18\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2\omega_6\omega_{22}+6\omega_{13}^2c_s^4\omega_{18}\omega_9\omega_6^3\omega_{22}+$
$12\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2-36v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}-12v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}+6\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_6^3\omega_{22}+12\omega_{13}^2v_3^2\omega_{11}\omega_9^2\omega_6^3-48\omega_{13}^2v_1^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_{22}$

$C_{34}=12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}+4\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}-18\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}-24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}+12v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}+$
$24c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}-12\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}-132\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}+12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3+12\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3+$
$12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}-12\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}+24\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3-24\omega_{13}^2c_s^2\omega_{11}^2\omega_9^2\omega_6^3\omega_{22}-12\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}+18\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}-$
$96\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_{22}+24\omega_{13}^2c_s^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}-24\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2+12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}+12\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}-$
$6\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}-18\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}-24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2-24\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2-12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22}+$
$48\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^2\omega_{22}-72\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6\omega_{22}+24\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}+24\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3+24\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3+$
$24\omega_{13}^2c_s^2\omega_{11}^2\omega_9^2\omega_6^2\omega_{22}+12\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3-\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}-24v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}-48c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}+12\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}+$
$60\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}-42\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22}-18\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22}+24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2+24\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2+$
$66\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}+90\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}+36\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}+12\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}-84\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}-$
$12\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}-24\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}-24\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}-66\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}+12\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22}+$
$156\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22}-12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3-12\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3-4\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22}-24\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3+24\omega_{13}^2c_s^2\omega_{11}\omega_9^2\omega_6^3\omega_{22}-$
$12\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3-12\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^3+12\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}-12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22}-12\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}-$
$12\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}-66\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}+36\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22}-12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}+84\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}+$
$12\omega_{13}^2v_1^2\omega_{11}\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}-12\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}-36\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22}-36\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22}+12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22}+$
$12\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22}+12\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22}+6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}+6\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}-24\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2+$
$\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}+3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3\omega_{22}-12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3-12\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3\omega_{22}+18\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22}-24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3-$
$24\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^3+12\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^3+12\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2\omega_6^3\omega_{22}-6\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22}+72\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6\omega_{22}-24\omega_{13}^2c_s^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}+$
$24\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2+24\omega_{13}^2v_1^2\omega_{11}^2\omega_{18}\omega_9^2\omega_6^2-12\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6\omega_{22}+24\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2\omega_{22}+6\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}+24\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2\omega_6^2$

$C_{35}=2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}+2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}-\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}+$
$2v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}-8v_2\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_{22}\omega_{19}+\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}+$
$v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}-2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}+v_2\omega_{13}v_3^2\omega_7v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}-$
$v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}-2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}-v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}+$
$v_2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}-8v_2\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}-2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}+$
$2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}-4v_2\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^3\omega_{22}\omega_{19}-v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}-$
$4v_2\omega_{13}c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}-2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}-2v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}+$
$2v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}+2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19}+2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}+$
$2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}+v_2^2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}-2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}+$
$2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}+\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}+2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19}+$
$2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}-2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}-2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}+$
$12v_2\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6\omega_{22}\omega_{19}-2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}-v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}-$
$2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19}+v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}+2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}-$
$v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}+\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}+2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}-$
$2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}+2v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}-2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}+$
$4v_2\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}-2\omega_{13}v_3^2\omega_7v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}-v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}-$
$2v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}+v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}-2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}+$
$2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}+v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}+2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}+$
$2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}+\omega_{13}v_3^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}+2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}-$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}-2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}+2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}-$
$2v_2\omega_{13}v_3^2\omega_7v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}-v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}+2v_2^2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}-$
$2v_2\omega_{13}v_3^2\omega_7v_1^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}-v_2\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}+2v_2^2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}-$
$2v_2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}+4v_2\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^3\omega_{22}\omega_{19}-2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}+$
$2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}-2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19}+2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}-$
$2v_2^2\omega_{13}v_3^2\omega_7v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}-2v_2\omega_{13}v_3^2\omega_7v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}-2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}+$
$2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}-2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19}-2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}-$
$2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}+2v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}+2v_2\omega_{13}v_3^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}+$
$2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}+v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}+2v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}-$
$2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}-2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19}-2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}-$
$2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}-2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19}-2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}-$
$2v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}-2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19}+2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}-$
$\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19}+2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19}-v_2\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}-$
$v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}-v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}-2v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}+$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19}-v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}+4v_2\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}+$

$2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + \omega_{13}v_3^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19} -$
$2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19} - 2\omega_{13}v_3^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19} - \omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} -$
$2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7v_1^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19} - 2v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} +$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + v_2^2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} + v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}v_3^2\omega_7v_1\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} -$
$2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} - \omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$v_2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} +$
$8v_2\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - v_2\omega_{13}v_3^2\omega_7v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} + v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} - 2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} +$
$v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}v_3^2\omega_7v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} + 2\omega_{13}v_3^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} - v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} -$
$2\omega_{13}v_3^2\omega_7v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} +$
$v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} + 2v_2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}\omega_7v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 2v_2\omega_{13}\omega_7v_1^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - \omega_{13}v_3^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} - 2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} +$
$v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}v_3^2\omega_7v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7v_1^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19} - v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} + v_2\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} + 2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} -$
$v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} + 2v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}\omega_7^2v_1^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} - v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19} - 2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19} + 2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$8v_2\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - v_2\omega_{13}v_3^2\omega_7v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} - v_2\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - v_2^2\omega_{13}v_3^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} + 2v_2^2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2v_2^2\omega_{13}\omega_7v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} -$
$v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + v_2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}v_3^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}v_3^2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} + v_2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}$

$C_{36} = 2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + \omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 6v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19} - 4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 2v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^2\omega_{22}\omega_{19} + \omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} +$
$v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$2v_2\omega_{13}^2v_3^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - \omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} -$
$2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19} +$

$2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} +$
$4v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} - \omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6\omega_{22}\omega_{19} + 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 4v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} -$
$2v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + \omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19} + v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19} - 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + \omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} - \omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} -$
$2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} +$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 10v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6\omega_{22}\omega_{19} -$
$2v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$2v_2\omega_{13}^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{19} +$
$4v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} - v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - \omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} -$
$v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} - v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} - 2v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} - 2v_2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} +$
$v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + \omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} - 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} +$
$2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + \omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} - 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19} + v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} -$
$2v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - \omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19} - 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 8v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19} + 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} -$
$2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} - 12v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}^2v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$v_2^2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2^2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19} -$
$v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} + 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19} + 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} +$
$v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2\omega_{13}^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 2v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{19} -$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} + 2v_2\omega_{13}^2v_3^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} +$
$v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + \omega_{13}^2v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} - 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2^2\omega_{13}^2v_3^2\omega_7v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2^2\omega_{13}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 2v_2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22} -$
$v_2^2\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19} - 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$4v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}^2v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^2\omega_{19} -$

$2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}^2v_3^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_6^3\omega_{22}\omega_{19} -$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_6^3\omega_{19} - 2v_2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 6v_2\omega_{13}^2\omega_7v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6\omega_{22}\omega_{19} -$
$4v_2\omega_{13}^2v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2^2\omega_{13}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}$

$C_{37} = 6\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 60\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 36\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} +$
$24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} + 6\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{22}\omega_{19} -$
$12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} - 6\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 24\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{22}\omega_{19} + 12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} -$
$6\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 24v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$6\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 24\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 6\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} -$
$6\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 6\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 6\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} -$
$24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} -$
$12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 18\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 6\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} -$
$24v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 6\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} + 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 24\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} + 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} +$
$12v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 10\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$6v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} -$
$12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$6v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} - 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} -$
$24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 12v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 60\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$6\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 36\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$12v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} + 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} + 6\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} + 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 12\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 6\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 6\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$12v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 6\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 6\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} -$
$\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} + 6\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} - 12v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 6v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$6v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} - 6\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 6\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$6\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{22}\omega_{19} + 12v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} - 6\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} -$
$12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 24v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 18\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$

$12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 24v_2\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} -$
$24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} + 24\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} + 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} - 24v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 24\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{22}\omega_{19} - 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$24\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} + 18\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 18\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 36\omega_{13}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} -$
$24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$6\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 24v_2\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} +$
$12v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 6\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} +$
$24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} - 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} - 2\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$48\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 12v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} +$
$12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 12\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$6\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} - 24\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19} +$
$12\omega_{13}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$24v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 6\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}\omega_7v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$6\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 24v_2\omega_{13}v_3^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} -$
$6\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7^2v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$6v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 42\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} + 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}v_3^2\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 6v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$24\omega_{13}v_3^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} + 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^2\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{22}\omega_{19} + 6\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$24v_2\omega_{13}v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} + 6\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 24v_2\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}v_3^2\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 24v_2\omega_{13}\omega_7^3v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12v_2v_3^2\omega_7^3v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12v_3^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 24\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$12\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 24v_2\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 18\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$6\omega_{13}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 6\omega_{13}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12v_3^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^3v_1^2c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}$

$C_{38} = 2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} - 4v_2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} - 4v_2\omega_7^2v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} -$
$2v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 2v_2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2v_1^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2^2\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 4v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} - 2v_2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} -$
$4v_2^2\omega_{13}\omega_7^2v_1\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 2v_2\omega_7^2v_1^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} -$
$2v_2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 6v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6\omega_{22}\omega_{19} + 4\omega_{13}\omega_7v_1c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$4\omega_{13}\omega_7^2v_1c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_6^2\omega_{22}\omega_{19} + 2\omega_7^2v_1c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} -$
$4v_2\omega_{13}\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} -$
$4v_2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 8v_2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} -$
$2v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 4\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 12v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 2v_2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} + 4\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} + 4\omega_{13}\omega_7^2v_1c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$4v_2\omega_{13}c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 2v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} - 4\omega_7^2v_1c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} +$
$2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 2v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2\omega_6\omega_{22}\omega_{19} + 4\omega_7^2v_1c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} -$
$4v_2^2\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2v_1^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} -$
$2v_2^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$8v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} +$
$4v_2^2\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 4\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 4\omega_{13}\omega_7^2v_1c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} +$
$2v_2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 12v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} -$
$4v_2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 2\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} -$
$4v_2^2\omega_{13}\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} + 2v_2^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} +$
$4v_2\omega_{13}\omega_7^2v_1^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7^2v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} +$
$4v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4\omega_7^2v_1c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$
$4v_2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 4\omega_{13}\omega_7v_1c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}\omega_7^2v_1c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} - 4v_2^2\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_{13}\omega_7v_1c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} -$
$2v_2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7^2v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} -$

$4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 2v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} +$
$4v_2\omega_{13}\omega_7 v_1^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 12v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{22}\omega_{19} - 4\omega_{13}\omega_7 v_1 c_s^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$9v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} + 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} -$
$2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 2v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$4v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}\omega_7 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22} + 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 2v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 4v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} +$
$4v_2\omega_{13}\omega_7 v_1^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} + 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} -$
$8v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$4v_2^2\omega_{13}\omega_7 v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 8v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 2v_2^2\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7^2 v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} -$
$4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} +$
$4v_2\omega_{13}\omega_7^2 v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2v_2\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} +$
$2v_2^2\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 2v_2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} -$
$2\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} -$
$4v_2^2\omega_{13}\omega_7 v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} + 2v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 2v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} -$
$4\omega_{13}\omega_7 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7 v_1^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} +$
$4v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} +$
$2v_2\omega_{13}\omega_7 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} +$
$4v_2^2\omega_{13}\omega_7^2 v_1\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 2v_2\omega_{13}\omega_7 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} - 2v_2\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} -$
$4v_2^2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22} + 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} +$
$2v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} -$
$2v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22} + 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} +$
$2v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_6^3\omega_{22}\omega_{19} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$2v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 8v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_{22}\omega_{19} + 2v_2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} -$
$12v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} + 2\omega_{13}\omega_7 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7 v_1^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$4v_2\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} + 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} +$
$4v_2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 14v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} - 2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} -$
$2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} + 2v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 4v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} +$
$4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} - 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 4v_2^2\omega_{13}\omega_7^2 v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} +$
$2v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4v_2^2\omega_{13}\omega_7^2 v_1\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19} -$
$4v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{22}\omega_{19} + 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} +$
$2v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} - 4v_2^2\omega_{13}\omega_7^2 v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} -$
$4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2^2\omega_{13}\omega_7 v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} +$
$2v_2\omega_{13}\omega_7^2 v_1^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} + 4v_2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22} -$
$2\omega_{13}\omega_7^2 v_1 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} + 2v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} - 4\omega_{13}\omega_7^2 v_1 c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} +$
$4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19} + 4v_2\omega_{13} c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19} - 4v_2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{22}\omega_{19} -$
$4v_2^2\omega_{13}\omega_7^2 v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19} + 2v_2^2\omega_{13}\omega_7 v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{22} - 4v_2\omega_{13}\omega_7^2 v_1^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{22}\omega_{19}$

$C_{39} = -2\omega_{16}v_2^2 v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_3^2\omega_7^3\omega_{23}v_1 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} + \omega_{16}v_2^2 v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_2^2 v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 4\omega_{16}\omega_7^3\omega_{23}v_1 c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2v_2^2\omega_7^2\omega_{23}v_1 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$v_3\omega_7^3 v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2 v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} + \omega_{16}v_2^2 v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} -$
$2\omega_{16}v_2^2 v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} - 2\omega_{16}v_2^2 v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_2^2\omega_7^3 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_2^2 v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2v_3\omega_7^2\omega_{23}v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_3^2\omega_7^2\omega_{23}v_1 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_2^2 v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19} - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2 c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_2^2 v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_6^2\omega_{19} + 2\omega_{16}v_2^2 v_2^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 +$
$2\omega_{16}v_2^2 v_3^2\omega_7^3\omega_{23}v_1 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}v_2^2\omega_7^3\omega_{23}v_1 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} - 2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} -$
$4\omega_{16}\omega_7\omega_{23}v_1 c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} - 2v_2^2\omega_7^2\omega_{23}v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_3\omega_7^3\omega_{23}v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} -$
$2\omega_{16}v_3\omega_7^2\omega_{23}v_1^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_3^2\omega_7^3 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} +$
$2v_3^2\omega_7^2\omega_{23}v_1 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_3\omega_7^3 v_1^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}v_2^2 v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} - \omega_{16}v_3^2\omega_7^3\omega_{23}v_1 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19} + 2v_3\omega_7^2\omega_{23}v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_3^2\omega_7^2\omega_{23}v_1 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_2^2 v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 -$
$2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 4\omega_{16}\omega_7^2\omega_{23}v_1 c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_2^2\omega_7^3\omega_{23}v_1 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19} +$
$2\omega_{16}v_3\omega_7^3 v_2^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2 v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} +$
$v_2^2 v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + v_2^2 v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_3\omega_7^2\omega_{23}v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_3\omega_7^2\omega_{23}v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_2^2 v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_3^2\omega_7^2 v_1 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2 c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} - 4\omega_{16}\omega_7^3\omega_{23}v_1 c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_{18}\omega_6^2\omega_{19} +$

$2\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} - 8\omega_{16}\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} +$
$2\omega_{16}v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19} + \omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} - 2\omega_{16}v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} +$
$\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} + 4\omega_{16}\omega_7\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 -$
$v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 -$
$2v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} + 2\omega_{16}v_2^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 +$
$2v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} + 2\omega_{16}v_2^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 -$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - v_2^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 +$
$2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} + \omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 4\omega_{16}\omega_7^2\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_{19} -$
$2\omega_{16}v_2^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_3\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - \omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} -$
$4\omega_{16}\omega_7^2\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} -$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} + 2\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_2^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + \omega_{16}v_2^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} -$
$2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} + v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 -$
$2\omega_{16}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} - 2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} -$
$2\omega_{16}v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} +$
$\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - \omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} -$
$\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} +$
$8\omega_{16}\omega_7^2\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} - v_3^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} +$
$2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - \omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} +$
$\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19} + 2\omega_{16}v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + v_2^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} +$
$v_2^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 -$
$\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 -$
$v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19} -$
$\omega_{16}v_3\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_2^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 +$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} + \omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - v_2^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + \omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} - 12\omega_{16}\omega_7\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_3\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2v_2^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} +$
$\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + \omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} + 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 -$
$2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2 + \omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19} - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} -$
$\omega_{16}v_3\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} +$
$\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + \omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 -$
$v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 4\omega_{16}\omega_7^3\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19} + 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2 +$
$2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} + 2v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + \omega_{16}v_2^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_3\omega_7^2\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 +$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2v_3^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}v_2^2v_3^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} -$
$2v_2^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 -$
$\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19} + 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 8\omega_{16}\omega_7^2\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} + 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} - 8\omega_{16}\omega_7^3\omega_{23}v_1c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} - \omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} +$
$2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} - 2\omega_{16}v_3^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$

$\omega_{16}v_2^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2v_2^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2v_2^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} + 2\omega_{16}v_3^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}v_2^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_3\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2$

$C_{40} = 12v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19} +$
$12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19} -$
$24\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 24v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 24\omega_{16}v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$6v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6\omega_{16}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{16}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{19} + 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19} -$
$12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{19} +$
$24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 6\omega_{16}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$12\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^3 - 24\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$12\omega_{16}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 -$
$12v_2^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19} + 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$24\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$12\omega_{16}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} - 12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_8^3\omega_{19} - 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} -$
$12v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 18\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$12v_2^2v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$48\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 -$
$24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 24\omega_{16}v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$24\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 6\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$24\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 12\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$24\omega_{16}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 24v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 18\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} -$
$12\omega_{16}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19} +$
$24\omega_{16}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$6\omega_{16}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6^3\omega_{19} + 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$12\omega_{16}v_3^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6\omega_{19} + 12v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_3^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} +$
$24v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 6\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19} -$
$12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 18\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$36\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19} +$
$24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 24v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12v_2^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19} + 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 6v_2^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$60\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6v_2^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$36\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19} - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^3\omega_{19} - 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} + 10\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} -$
$24\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} + 24\omega_{16}v_2^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19} +$
$12\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3 - 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 6v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19} -$
$24\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$

$42\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19} + 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19} -$
$12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3 - 12v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$24\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 24\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} - 18\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$12\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19} -$
$6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19} - 6\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} - 24\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$24\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 6\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12v_3^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$6\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6\omega_{19} + 6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^3 +$
$12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$6\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19} + 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$24\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6v_3^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 12\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19} - 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^2\omega_{19} -$
$60\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} - 6v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 24v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 24\omega_{16}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_3^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_6^3\omega_{19} +$
$12\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3 - 18\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 36\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 6v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^3\omega_{19} + 24\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$12\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$12\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^2\omega_{19} -$
$6v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$24\omega_{16}v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 24\omega_{16}v_2^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_{16}v_3^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 -$
$24\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 +$
$12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} -$
$6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} + 12\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_6^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$12\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_6^3\omega_{19} + 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 24\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$12\omega_{16}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 2\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} -$
$24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 12\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} - 6\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19} + 24\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{19} + 12\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_6^3\omega_{19} +$
$24\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 + 12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_6^3 - 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3$

$C_{41} = -2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} - 2\omega_{16}v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} -$
$2\omega_{16}^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} - 2\omega_{16}^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 +$
$2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 5\omega_{16}^2\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} -$
$2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + \omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} + 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19} + \omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19} +$
$2\omega_{16}\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} + 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} -$
$\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} + 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} + \omega_{16}v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + \omega_{16}v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} +$
$\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19} + 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 6\omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} -$
$4\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} - 2\omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2 +$
$2\omega_{16}^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - \omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19} -$
$2\omega_{16}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} - 2\omega_{16}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} + 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 4\omega_{16}^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19} -$
$2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_8^2\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19} -$
$\omega_{16}v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} + \omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} +$
$2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} -$
$\omega_{16}^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} + 2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 -$
$2\omega_{16}^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} - 2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} -$

$2\omega_{16}v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - \omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_6^2\omega_{19} - \omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - \omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} -$
$\omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_{19} - 2\omega_{16}v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$3\omega_{16}^2\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} + 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} - \omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}v_3^2\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} + \omega_{16}^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} -$
$2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} - 6\omega_{16}\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 +$
$\omega_{16}^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 -$
$\omega_{16}\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} + 2\omega_{16}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 +$
$\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} +$
$2\omega_{16}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} -$
$\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} + \omega_{16}v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 +$
$\omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} +$
$\omega_{16}v_3\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 +$
$3\omega_{16}^2\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}^2v_3\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_{18}\omega_6^2 + 2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 - \omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_8^2\omega_6^2\omega_{19} - \omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}^2v_3^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 +$
$2\omega_{16}v_3\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} - \omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_6^2\omega_{19} - \omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18}\omega_6^2\omega_{19} + \omega_{16}^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} - 3\omega_{16}^2\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}^2v_3^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_6^2 - 2\omega_{16}^2v_3^2\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 -$
$2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19} + 2\omega_{16}^2v_3^2\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_6\omega_{19} - 2\omega_{16}^2v_3\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_6^2 -$
$2\omega_{16}^2v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}$

$C_{42} = -4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 4\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 -$
$2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 + 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$\omega_{16}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} -$
$4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} + 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 2\omega_{16}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$4\omega_{16}v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 6\omega_{16}v_3\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 +$
$2\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 - 2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2 +$
$4\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 4v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$12\omega_{16}v_3\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 8\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} -$
$4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 4\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + v_2^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 12\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2 +$
$4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_{18}\omega_6^2\omega_{19}^2 + \omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + \omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$4\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2v_2^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - \omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$4\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - \omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$4\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 4\omega_{16}v_3\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} -$
$\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} -$
$4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - \omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - \omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 - 2\omega_{16}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 - 4\omega_{16}v_3\omega_7^2v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$\omega_{16}\omega_7^3v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_3\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + \omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 14\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$

$2\omega_{16}\omega_7^3 v_1^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} -$
$2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - \omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 2v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2 +$
$4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_{16}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2\omega_{16}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_3\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_{18}\omega_6^2\omega_{19}^2 -$
$\omega_{16}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - \omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - \omega_{16}v_2^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 2v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + \omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6\omega_{19}^2 + 2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$12\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 4\omega_{16}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$2\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$4\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} - 4\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} -$
$4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2 - 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$
$2v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$8\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + \omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18}\omega_6\omega_{19}^2 + \omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$2\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 4\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2 +$
$2\omega_{16}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + \omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_{16}v_2^2v_3\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 4v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$9\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 4\omega_{16}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - \omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 4\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2 - 8\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 4\omega_{16}v_3\omega_7\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2 -$
$\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 4\omega_{16}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$4\omega_{16}v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - \omega_7^3\omega_{23}v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_7^2\omega_{23}v_1^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$2v_2^2v_3\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} - 2\omega_{16}v_2^2\omega_7^2\omega_{23}v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$4\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2\omega_{16}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 4\omega_{16}v_2^2v_3\omega_7^2\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19} + 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18}\omega_6\omega_{19}^2 - 4\omega_{16}v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} -$
$8\omega_{16}v_3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 2\omega_{16}\omega_7^2v_1^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19} - 2\omega_{16}\omega_7^2\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$2\omega_{16}v_2^2\omega_7^3\omega_{23}v_1^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 8\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} -$
$2\omega_{16}\omega_7^3\omega_{23}v_1^2c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2\omega_{16}v_3\omega_7^3\omega_{23}v_1c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2\omega_{16}v_2^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 2v_3\omega_7^3v_1c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$2v_2^2v_3\omega_7^3\omega_{23}v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + v_2^2\omega_7^3\omega_{23}v_1^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 4\omega_{16}v_3\omega_7^2\omega_{23}v_1c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$v_2^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_{16}v_2^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}$

$C_{43} = -6\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} - 18\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} + 12\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23} + \omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} - 12\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2 -$
$12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 24\omega_{16}^2\omega_{10}v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19} + 12\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} + 18\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} +$
$156\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19} - 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{11} + 6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{19} - 36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4 + 24\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19} - 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{19} +$
$18\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{11}\omega_{19} + 6\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} - 18\omega_{16}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} - 12\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{11}\omega_{19} - 45\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} +$
$24\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{19} - 60\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19} - 6\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} - 36\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2 - 12\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19} +$
$12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11} - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2c_s^2\omega_{11}\omega_{19} + 6\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{11}\omega_{19} - 12\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{11} + 12\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11} + 36\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19} -$
$18\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{19} - 36\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} - 6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} - 96\omega_{16}^2\omega_{10}\omega_{23}c_s^4\omega_{11}\omega_{19} + 15\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19} +$
$12\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19} + 6\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} - 12\omega_{16}^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} - 48\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} + 36\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4\omega_{11} -$
$24\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19} + 54\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19} + 12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{11} - 72\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19} - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{11} +$
$6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{11}\omega_{19} + 18\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} - 6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{11}\omega_{19} - 6\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19} - 6\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19} -$
$36\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} - 24\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19} - 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19} + 15\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} + 6\omega_{16}^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} -$
$6\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{11}\omega_{19} - 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 + 12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} - 6\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19} + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19} + 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} -$
$36\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{11} + 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2 + 12\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} + 3\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} + 6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{19} - 12\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19} -$
$36\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19} - 36\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{19} - 24\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{19} + 12\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{11} - 6\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{19} -$

$$12\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}+27\omega_{16}^2\omega_{10}v_3^3\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}+6\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}-18\omega_{16}^2\omega_{10}v_3^3\omega_7^3\omega_{23}c_s^2\omega_{19}+12\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}-$$
$$36\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+18\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-36\omega_{16}^2\omega_{10}\omega_7^3c_s^4\omega_{11}+36\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4-6\omega_{16}\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{11}\omega_{19}-12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}-$$
$$3\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-12\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{19}+36\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+72\omega_{16}^2\omega_{10}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}+6\omega_{16}^2\omega_{10}^2v_2^2v_3^3\omega_7^3\omega_{11}\omega_{19}+$$
$$12\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}-6\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}v_3^3\omega_7^3\omega_{23}\omega_{11}-15\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}-12\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{11}\omega_{19}-$$
$$12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}+24\omega_{16}\omega_{10}^2v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19}-108\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}+36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}-$$
$$18\omega_{16}\omega_{10}^2\omega_{23}c_s^2\omega_{11}\omega_{19}-36\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4\omega_{11}\omega_{19}-15\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}-6\omega_{16}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}-36\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}+$$
$$36\omega_{16}\omega_{10}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{19}-18\omega_{16}\omega_{10}^2\omega_7^3c_s^4\omega_{11}\omega_{19}-\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}+12\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}+$$
$$6\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{19}-36\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}-72\omega_{16}\omega_{10}^2v_3^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2-5\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-$$
$$18\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{19}+36\omega_{16}\omega_{10}^2\omega_7^2c_s^4\omega_{11}\omega_{19}-18\omega_{16}\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{11}\omega_{19}+48\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+6\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19}+$$
$$36\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}+12\omega_{16}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+36\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2c_s^2\omega_{11}+18\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{11}\omega_{19}+12\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}-$$
$$12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3+5\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}+12\omega_{16}\omega_{10}^2v_2^2\omega_7^2c_s^2\omega_{11}\omega_{19}-12\omega_{10}^2v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+$$
$$12\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19}-12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3+18\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}+9\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{11}\omega_{19}+$$
$$12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}+72\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19}-42\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}+12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2c_s^2\omega_{11}+$$
$$18\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{19}+12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}-9\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}+144\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+36\omega_{16}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+$$
$$24\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19}+6\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}+36\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3c_s^2+12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{11}\omega_{19}+12\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+3\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}$$

$$C_{44}=-6\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}-18\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}-36\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2-12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}-$$
$$24\omega_{16}^2\omega_{10}v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19}+36\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}-36\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+54\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+18\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}-$$
$$12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{11}+6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{19}-12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4+72\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19}-18\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{19}+6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{11}\omega_{19}+$$
$$18\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}-6\omega_{16}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-36\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{11}\omega_{19}-15\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}+24\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{19}-$$
$$5\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2-36\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}-36\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2c_s^2\omega_{11}\omega_{19}+$$
$$6\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{11}\omega_{19}-36\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{11}+12\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}+12\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19}-6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{19}-$$
$$12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}-6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}\omega_{23}c_s^4\omega_{11}\omega_{19}+6\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}-$$
$$12\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-12\omega_{16}^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}-48\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4\omega_{11}-72\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19}+$$
$$18\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{11}-24\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19}-36\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{11}+18\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{11}\omega_{19}-$$
$$102\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}-6\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3\omega_{11}\omega_{19}-18\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19}-6\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}-12\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}-$$
$$72\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19}+15\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}+6\omega_{16}^2v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}-18\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2+$$
$$12\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}-12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{11}+36\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3c_s^2+12\omega_{10}^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}-$$
$$6\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}+6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{19}-36\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{19}-$$
$$24\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{19}+36\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{11}-18\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{19}+60\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}+9\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}+$$
$$18\omega_{16}\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}-6\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19}+36\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}-108\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+6\omega_{10}^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-$$
$$12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{11}+12\omega_{16}^2\omega_{10}\omega_7^3c_s^4-18\omega_{16}\omega_{10}^2v_2^2\omega_7^3c_s^2\omega_{11}\omega_{19}-12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}+30\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-12\omega_{16}\omega_{10}^2v_3^2\omega_7^3\omega_{23}\omega_{19}+$$
$$36\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+24\omega_{16}^2\omega_{10}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}+18\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{11}\omega_{19}-12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}-6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}-$$
$$12\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}-5\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}-12\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}+24\omega_{16}\omega_{10}^2v_3^2\omega_7\omega_{23}\omega_{11}\omega_{19}-$$
$$36\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}-36\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}+12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}+18\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}-48\omega_{16}^2\omega_{10}v_2^2\omega_{23}c_s^2\omega_{11}\omega_{19}-$$
$$12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4\omega_{11}\omega_{19}-45\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}-18\omega_{16}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}-12\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}+12\omega_{16}\omega_{10}^2v_3^2\omega_7^2c_s^2\omega_{11}\omega_{19}-$$
$$6\omega_{16}\omega_{10}^2\omega_7^3c_s^4\omega_{11}\omega_{19}-36\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}+6\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19}-12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}-24\omega_{16}\omega_{10}^2v_3^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2-$$
$$15\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{19}+12\omega_{16}\omega_{10}^2\omega_7^2c_s^4\omega_{11}\omega_{19}-6\omega_{16}\omega_{10}^2v_3^2\omega_7^3c_s^2\omega_{11}\omega_{19}+144\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+$$
$$18\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19}+12\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}+36\omega_{16}^2v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2c_s^2\omega_{11}+6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{11}\omega_{19}+$$
$$12\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{11}\omega_{19}-15\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+36\omega_{16}^2\omega_{10}^2v_2^2v_3^2\omega_7^3+5\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}+36\omega_{16}\omega_{10}^2v_2^2\omega_7^2c_s^2\omega_{11}\omega_{19}+$$
$$24\omega_{10}^2v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+36\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19}-12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3+6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}+27\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}+$$
$$36\omega_{16}\omega_{10}^2v_2^2v_3^2\omega_7^2\omega_{11}\omega_{19}+60\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}+24\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{19}-18\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}-36\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}+$$
$$36\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2c_s^2\omega_{11}+6\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{19}+12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}\omega_{19}-9\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}+48\omega_{16}\omega_{10}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+$$
$$12\omega_{16}^2v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}+72\omega_{16}^2\omega_{10}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{19}+6\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^3c_s^2+12\omega_{16}^2\omega_{10}^2v_3^2\omega_7^2\omega_{11}\omega_{19}-\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}$$

$$C_{45}=12\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2-12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2+24\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2-24\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}+12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2-$$
$$12\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2-36\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2-24\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2+24\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}+84\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2-$$
$$12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{11}\omega_{19}^2-24\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}^2+12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}+36\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2-72\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}\omega_{19}^2+$$
$$24\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{11}^2\omega_{19}^2+12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}+24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2+24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}^2+3\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2+$$
$$24\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{11}^2\omega_{19}+4\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2+24\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}-12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2+36\omega_{16}^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2+$$
$$90\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2-24\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{11}^2\omega_{19}^2-12\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2+12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2-24\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2-$$
$$12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}+\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2-18\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2-12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2-24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2\omega_{19}+$$
$$60\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}+24\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2+48\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}-24\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2+24\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{19}+$$
$$24\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{11}\omega_{19}-12\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2-48\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2-36\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2+12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}\omega_{19}^2-$$
$$12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2-24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{19}^2+12\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2-24\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}+6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2-$$
$$24\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{11}^2\omega_{19}-12\omega_{16}^2\omega_{23}\omega_{11}^2\omega_{19}^2-132\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}-66\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2-\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2-$$
$$42\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}+12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}-12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2-12\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2+24\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}-$$
$$6\omega_{16}^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2-18\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2-12\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}^2-24\omega_{10}^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2+12\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2+$$
$$12\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2+12\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}^2+24\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2+24\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2+12\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2+$$
$$72\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}-84\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}-4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2-12\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2+12\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2-$$
$$12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}+156\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2+12\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2+18\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2-6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2-$$
$$24\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2+12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2+12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2-24\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2-96\omega_{16}^2\omega_{10}^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2-$$
$$18\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2+18\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2-12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}\omega_{19}^2+6\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2+24\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2\omega_{19}+12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2-$$
$$66\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2+66\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2+12\omega_{16}^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2-12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}+6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2$$

$$
C_{46} = -12c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 12\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 36\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^3 - 12v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} -
12v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 24\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}c_s^4\omega_{11}^3\omega_6^2\omega_{22} - 12\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_6^2\omega_{22} + 12\omega_{13}v_1^2\omega_{11}^3\omega_{18}\omega_6^3 +
12\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 24\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}v_1^2\omega_{11}^3\omega_6^2\omega_{22} -
12\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}\omega_6^3 + 150\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 36\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_6^2\omega_{22} + 12\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 36\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3 +
12\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}\omega_6^2 + 36\omega_{13}v_1^2c_s^2\omega_{18}^2\omega_6^3\omega_{22} - 36\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_1^2\omega_{11}^3\omega_{18}\omega_6^2 + 5\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} - 36v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} -
72\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 6c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 + 36\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^2 + 12\omega_{13}v_3^2v_1^2\omega_{18}^2\omega_6^3\omega_{22} - \omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} + 36\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2 -
12\omega_{13}v_1^2\omega_{18}^2\omega_6^3\omega_{22} + \omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3 + 36\omega_{13}c_s^4\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3 + 36\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_6^3\omega_{22} +
12v_3^2v_1^2\omega_{11}^3\omega_{18}^2\omega_6^2 + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} + 24\omega_{13}v_1^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} -
24\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 18\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 12\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_6^3\omega_{22} - 18\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 + 36v_1^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 +
12\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 12\omega_{13}v_1^2\omega_{11}^3\omega_6^3\omega_{22} - 2\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 6\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 6v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 6v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} +
6\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 6\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 12\omega_{13}c_s^4\omega_{11}^3\omega_6^3\omega_{22} - 6\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 2\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^2\omega_6^3\omega_{22} -
12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} + 6\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 6v_3^2v_1^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 72\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} -
6\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 + 18\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 18v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 18v_1^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 88\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} - 12v_1^2\omega_{11}^3\omega_{18}^2\omega_6^2 +
12c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 12v_1^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 42\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3 +
36c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2 - 48\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} + 108\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^3\omega_6^2\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3 - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} -
24\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 18\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 36c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} + 180\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} +
18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} + 24\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2 - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2 -
36\omega_{13}v_1^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} - 18\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} - 18c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3 + 36\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3 + 6v_1^2\omega_{11}^3\omega_{18}^2\omega_6^3 + 18\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} +
36\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} + 12\omega_{13}v_3^2c_s^2\omega_{18}^2\omega_6^3\omega_{22} - 42\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} + 36\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} + 36\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_6^3 - 12\omega_{13}c_s^2\omega_{18}^2\omega_6^3\omega_{22} +
12\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_6^3 + 72\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_6^3 - 12\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} + 12v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 + 12\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2\omega_6^2 +
12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}^2\omega_6^2 + 18\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 12\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} - 36\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2 + 72\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} -
18\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} + 18c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 36\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 36\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} +
12\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_6^3\omega_{22} - 36\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 12\omega_{13}c_s^2\omega_{11}^3\omega_6^3\omega_{22} - 6v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 6c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 -
6\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 96\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_{22} + 12\omega_{13}v_1^2\omega_{11}^2\omega_6^3\omega_{22} - 24\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} + 18\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3 -
12\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_6^3\omega_{22} - 36\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} + 30\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} - 54\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} +
24\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} + 12\omega_{13}c_s^4\omega_{11}^2\omega_6^3\omega_{22} + 6\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 6v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 6\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 84\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} -
12\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} - 6\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} - 36\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_6^3\omega_{22} + 18\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 + 6\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}v_1^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}
$$

$$
C_{47} = \omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 + 2\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} + 4\omega_{13}^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} +
8\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 5\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 7\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} + 11\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2\omega_{22} - 2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3\omega_{22} -
4\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 + 4\omega_{13}^2\omega_{11}^3\omega_9\omega_6^2\omega_{22} + \omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 4\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 4\omega_{13}^2v_3^2\omega_{11}^3\omega_9\omega_6^3\omega_{22} - 15\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} -
2\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} + \omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 4\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 + 9\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2\omega_{22} - \omega_{13}\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3\omega_{22} -
2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} - 4\omega_{13}^2v_3^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} + 4\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 - 5\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3\omega_{22} + 2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 2\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6\omega_{22} -
4\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 + 4c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 24\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 2\omega_{13}^2v_3^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 4\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3 - \omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} -
2\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 - 2\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 + 26\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6\omega_{22} + 2\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 3\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3\omega_{22} + 2\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 +
4\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} + 2\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 - 2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 4\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 - 4\omega_{13}^2v_3^2\omega_{11}^3\omega_9\omega_6^2\omega_{22} +
12\omega_{13}^2c_s^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} + 4\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2 + 6\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9\omega_6\omega_{22} - 3\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 4\omega_{13}^2\omega_{11}^3\omega_9\omega_6^3\omega_{22} - 8\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} -
\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 4\omega_{13}^2v_3^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 8\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 4\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3 + 2\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} +
13\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 9\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2\omega_{22} + 2\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3 - 16\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_{22} - \omega_{13}^2v_3^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2\omega_{22} +
4\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 8\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6\omega_{22} + 5\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 4\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 - 4\omega_{13}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} -
4\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2 + 7\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 6\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 8\omega_{13}^2c_s^2\omega_{11}^3\omega_9\omega_6^3\omega_{22} + 3\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3\omega_{22} + 2\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} -
4\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}\omega_9\omega_6^3 - 4\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 8\omega_{13}^2c_s^2\omega_{11}^2\omega_9\omega_6^3\omega_{22} + 4\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^2 + 3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 6\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}\omega_9\omega_6\omega_{22} -
8\omega_{13}^2c_s^2\omega_{11}^3\omega_9\omega_6^2\omega_{22} - 2\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6\omega_{22} - 2\omega_{13}^2v_3^2\omega_{11}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 4\omega_{13}^2v_3^2\omega_{11}^3\omega_{18}\omega_9\omega_6^2 - 4\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} - 2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} +
4\omega_{13}^2v_3^2\omega_{18}^2\omega_9\omega_6^3\omega_{22} - 2\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9\omega_6^3 - 4\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9\omega_6^3 - 6\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9\omega_6\omega_{22} - 2\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9\omega_6^3
$$

$$
C_{48} = -12c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 36\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} + 72\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^3 - 36v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} -
36v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 24\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 24\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 36\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_6^2\omega_{22} + 12\omega_{13}v_1^2\omega_{11}^3\omega_{18}\omega_6^3 + 12\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} -
72\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 180\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{13}v_1^2\omega_{11}^3\omega_6^2\omega_{22} - 36\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}\omega_6^3 + 24\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} -
12\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_6^2\omega_{22} - 12\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3 + 36\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}\omega_6^2 + 12\omega_{13}v_1^2c_s^2\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_1^2\omega_{11}^3\omega_{18}\omega_6^2 -
\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3\omega_{22} - 12v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 24\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 6c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 + 12\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^2 + 36\omega_{13}v_3^2v_1^2\omega_{18}^2\omega_6^3\omega_{22} +
12\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2 - 12\omega_{13}v_1^2\omega_{18}^2\omega_6^3\omega_{22} + 36\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3 - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3 + 12\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_6^3\omega_{22} + 36v_3^2v_1^2\omega_{11}^3\omega_{18}^2\omega_6^2 +
12\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} + 24\omega_{13}v_1^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 36\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 72\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} +
60\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 6\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 48\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_{22} + 36\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_6^3\omega_{22} - 6\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 + 12v_1^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 +
12\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 12\omega_{13}v_1^2\omega_{11}^3\omega_6^3\omega_{22} - 18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 18\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 18v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 18v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} +
6\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 18\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 6\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} - 42\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} + 24\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_6^3\omega_{22} +
18\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 18v_3^2v_1^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 24\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}\omega_6\omega_{22} - 6\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 + 6\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} + 6v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22} -
6v_1^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 4\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22} - 12v_1^2\omega_{11}^3\omega_{18}^2\omega_6^2 + 12c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} + 12v_1^2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} +
84\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} + 24\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_6^2\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3 + 12c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2 - 12\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} + 36\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} -
36\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3 - 24\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} + 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 108\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} - 12c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} +
36\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} + 18\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6\omega_{22} - 144\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} + 72\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} +
12\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} + 36\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2 - 12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2 - 36\omega_{13}v_1^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} + 24\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} - 6c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3 +
12\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3 + 6v_1^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 132\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} + 108\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} - 24\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^2\omega_{22} + 12\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_6^2\omega_{22} +
12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_6^3 + 36\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_6^3 + 24\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3\omega_{22} - 12\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_6^3 - 36\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} + 60\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} +
36v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 + 12\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 6\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 36\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}^2\omega_6^2 + 18\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22} - 12\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22} +
$$

$12\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}-12\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2+24\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}-54\omega_{13}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}+6c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}+18\omega_{13}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}+$
$6\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}-12\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}-24\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_6^3\omega_{22}-12\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2-6v_1^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}-6c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3\omega_{22}+$
$6\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3-18\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3-12\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_{22}+12\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}+12\omega_{13}v_1^2\omega_{11}^2\omega_6^3\omega_{22}-24\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}+$
$12\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}+6\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3-36\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_6^3\omega_{22}-12\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}+12\omega_{13}c_s^4\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}-18\omega_{13}v_1^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3\omega_{22}-$
$84\omega_{13}v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}+72\omega_{13}v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}+18\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}^2\omega_6^3-18v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3-6\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2\omega_6^3-12\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}-$
$36\omega_{13}v_3^2v_1^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}+78\omega_{13}v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}-12\omega_{13}v_1^2c_s^2\omega_{11}^2\omega_6^3\omega_{22}+6\omega_{13}v_1^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3-12\omega_{13}c_s^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}+12\omega_{13}v_1^2\omega_{11}^3\omega_{18}\omega_6^3\omega_{22}$

$C_{49}=6\omega_7^2c_s^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+3c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2+\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2-\omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2+$
$v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2-3\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}+v_3^2\omega_7\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2-3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}-\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+$
$v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2-3\omega_7^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}+\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}-3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_6^2\omega_{19}^2-$
$v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2+\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2+3\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2+v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2+$
$3\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-3v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2+v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2-3\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2+$
$\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2-v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2-3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}+v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-$
$6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+3\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2+v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2-\omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2-\omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}+$
$v_3^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}+2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2-2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2-v_3^2\omega_7^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2-v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2+$
$\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2-3\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2+\omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+6\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2-v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2-v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2+v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_6^2\omega_{19}^2-$
$v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}+3\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2+\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}+2v_3^2\omega_7^2\omega_{20}\omega_{8}\omega_{18}^2\omega_6^2\omega_{19}^2-2\omega_7^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-$
$\omega_7^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2-\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}+v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}-v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}+\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}-$
$6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2+2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}-3\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}-2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}+3\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2+$
$3\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2+2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}+3\omega_7c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2-2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}+6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2+$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2+3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2+3\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2-\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}+$
$v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}-v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}+\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}+6\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}-9\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-$
$\omega_7\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2-3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2-3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2-v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}-\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2+$
$\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}+v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2-3\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2-3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}-$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2-3\omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}-3\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2+v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2-\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2+$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}-v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}-3\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2+\omega_7^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2+$
$3\omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}+3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2+\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2-v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2+\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2-$
$\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2-v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2+v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2+6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}-$
$v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2+\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2-\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2+v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2+3\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}+$
$\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2-v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2-2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+v_3^2\omega_7^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2+$
$\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2-v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2-3\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2-2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2+2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2+$
$\omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2+v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2+v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2+$
$\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}+v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}+v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2+$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2-v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2+3\omega_7^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2+2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2+$
$9\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2+2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_6^2\omega_{19}^2+2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2+2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2-2v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}+$
$2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}-2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}+4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}+3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}+2\omega_7c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2-$
$4\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2-3\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}+4\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2+4\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2-6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3-2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2-6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}-$
$2\omega_7c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2-2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6^2\omega_{19}^2-2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2+2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2-$
$2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2+15\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2+3v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}-3\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}+$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2-2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+2\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+$
$2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+4c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}-2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}-2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^3\omega_{19}+2v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}+$
$2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^3\omega_{19}^2-2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2-8\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2-2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^3\omega_6^2\omega_{19}+2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2+$
$9\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}+2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2-2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^3\omega_6^3\omega_{19}^2+2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^3\omega_6^3\omega_{19}^2+2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2-$
$2v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2-2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2+2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2-2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2-$
$13\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2+4v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2-2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2-4\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2-$
$2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2-\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2-2\omega_7\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^3\omega_{19}^2+$
$2v_3^2\omega_7\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2+6\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^3\omega_6^3-2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2-$
$3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}-3v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^3\omega_6^3\omega_{19}^2+3\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2+11\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2-$
$2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2+2v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2-4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2+\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2-2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2+$

$2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 - v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3 - 2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3 - 6c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} +$
$4\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 11\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 -$
$8\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_{19}^2 + 2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3 - 2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3 - 2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 +$
$2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 - 4c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 +$
$4v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^3\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2v_3^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} +$
$2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - 2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19} - v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$8\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^3\omega_{19}^2 + 2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^3\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^3\omega_{19}^2$

$C_{51} = 2\omega_7^3c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 9\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 2v_3^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} - 2\omega_7^3c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 4\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 6\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 -$
$2\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2v_3^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 +$
$2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2v_3^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 +$
$8\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6\omega_{19}^2 + 6\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 +$
$2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - \omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 8\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6\omega_{19}^2 - 2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6\omega_{19}^2 +$
$2v_3^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 3v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 3\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 - 6\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6\omega_{19}^2 -$
$6\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} - 2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 -$
$2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 +$
$4\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 3\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7^3c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2v_3^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$3v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 9\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 2\omega_7^3c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} - 2v_3^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} -$
$\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 -$
$4\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 3v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2v_3^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} -$
$2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + 11\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 9\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 +$
$2\omega_7^3c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2v_3^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 +$
$12\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 - 2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 +$
$6\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} + 2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} - 4\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$4v_3^2\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 4\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_{19}^2 - 8\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2 + 3\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 13\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$
$2v_3^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 4\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$2v_3^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^3c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 4v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 +$
$2v_3^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 4\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^3c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6\omega_{19}^2 -$
$2v_3^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19} - 2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^3c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$
$15\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 8\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_{19}^2 - 5v_3^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_{19}^2 + 5\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2 +$
$2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2\omega_7^3c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2 +$
$6\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_{19}^2 + 6\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_6^2\omega_{19}^2 - 2v_3^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$
$2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 - 4\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_{19}^2 - 4\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 4v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} +$
$4\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} - 8c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 3\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}\omega_6^2\omega_{19}^2 -$
$6\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_{19}^2 + 4\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_{19}^2 - v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}\omega_{19}^2 +$
$\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 - 15\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2\omega_6^2\omega_{19}^2 - 11\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2\omega_6\omega_{19}^2$

$C_{52} = 2\omega_7^2c_s^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 3v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 +$
$3v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - \omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 3v_3^2\omega_7\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - \omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 3v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_6^2\omega_{19}^2 -$
$3v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2 + \omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 + 3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$3\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 9v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2 + 3v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2 - \omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 +$
$\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - 3v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - \omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19} + 3v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + 3v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} +$
$3v_3^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - 3v_3^2\omega_7^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 - 3v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - 3v_3^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 -$
$\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_{19}^2 - 3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_6^2\omega_{19}^2 + 3v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_6^2\omega_{19}^2 -$
$3v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 6v_3^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2 -$
$\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} + 3v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - 3v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 +$
$6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - \omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$
$6v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 - 2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_6^2\omega_{19}^2 + \omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - \omega_7^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 3v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19} +$
$\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19} + 2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 3\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2 -$
$\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2 - 3v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - \omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2 + \omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} + 3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2 -$
$\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - \omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - \omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$
$3v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 - \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 + \omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 3v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} -$
$\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_{19}^2 + \omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2 - 3v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_6\omega_{19}^2 +$
$\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - 3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2\omega_6\omega_{19}^2 + 3v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 +$

$2\omega_7^2 c_s^2 \omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 3v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7^2\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19}^2 - \omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + 3v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$
$\omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19} + \omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2 - 6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + 2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$3v_3^2\omega_7^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 - 3v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 - \omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 +$
$6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 - 3v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + 6v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 - 2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}\omega_6\omega_{19}^2 -$
$\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} - 3v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2\omega_{19} + 3v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - \omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 +$
$\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6^2 - 3v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}^2 + \omega_7^2 c_s^2\omega_{11}^3\omega_{18}^2\omega_6\omega_{19}^2 + 2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 -$
$6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2\omega_6\omega_{19}^2 + \omega_7^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 - 3v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2\omega_6^2\omega_{19}^2 + \omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2\omega_6\omega_{19} - \omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2\omega_6^2\omega_{19}$

$C_{53} = -6\omega_{16}\omega_7^3 c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}\omega_7\omega_{23}c_s^4\omega_{11}^3\omega_{19} - 24\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2 + 18\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} -$
$12\omega_{16}v_3^2\omega_7^3c_s^2\omega_{11}^3\omega_{19} - 18v_2^2\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 - 72\omega_{16}v_2^2\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19} + 36\omega_{16}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} - 18\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{16}v_3^2\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 +$
$12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} - 72\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 36\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^3 + 18\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 +$
$24\omega_{16}v_2^2v_3^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2 - 18\omega_{16}\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_7^2c_s^2\omega_{11}^3\omega_{19} + 150\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 + 24\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3\omega_{19} - 36\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 -$
$12\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + \omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 - 6\omega_{16}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 72\omega_{16}v_2^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 18\omega_{16}v_2^2\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 -$
$54\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 36\omega_{16}\omega_7^2c_s^4\omega_{11}^3\omega_{19}^2 - 12\omega_{16}\omega_7^3c_s^2\omega_{11}^2\omega_{19} + 6v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 84\omega_{16}\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^3 -$
$12\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{11}^3\omega_{19} - 12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^3 - 36\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 - 24\omega_{16}v_2^2v_3^2\omega_7\omega_{23}\omega_{11}^3\omega_{19} - 42\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^3\omega_{19} -$
$36\omega_{16}\omega_7^3c_s^4\omega_{11}^3\omega_{19} + 12v_3^2\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{16}v_2^2\omega_7^2\omega_{11}^3\omega_{19} + 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{19}^2 + 36\omega_{16}v_2^2\omega_7^2c_s^2\omega_{11}^3\omega_{19} -$
$36\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 108\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19} - 36v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19} -$
$88\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2 + 18\omega_{16}\omega_7^3c_s^4\omega_{11}^3\omega_{19}^2 - 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{19}^2 - 36\omega_{16}v_2^2\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^3 +$
$12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19} - 36\omega_{16}v_2^2\omega_7^3c_s^2\omega_{11}^3\omega_{19} - 6v_3^2\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} - 6\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19} - 36\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} -$
$18\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 6\omega_{16}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 36\omega_{16}\omega_7^2c_s^4\omega_{11}^3\omega_{19} + 12\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 36\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19}^2 + 36v_2^2\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 +$
$12\omega_{16}v_3^2\omega_7^2c_s^2\omega_{11}^3\omega_{19} + 12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 36\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 6v_2^2\omega_7^3\omega_{11}^3\omega_{19}^2 +$
$12\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 12v_2^2v_3^2\omega_7^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} + 12\omega_{16}\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 + 36\omega_{16}\omega_7^3c_s^4\omega_{11}^2\omega_{19} + 12\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 +$
$12\omega_{16}\omega_7^3c_s^2\omega_{11}^3\omega_{19} - 18\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 180\omega_{16}\omega_7\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2 - 36\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3 - 18\omega_{16}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 -$
$12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} + 6\omega_{16}v_3^2\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 - 2\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 24\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 +$
$12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^3 - 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{11}^3\omega_{19} - 24\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} + 18\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^3\omega_{11}^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 +$
$24\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^3 + 6\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 - 12\omega_{16}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 24\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} +$
$18v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 5\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 18\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 6\omega_{16}v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 6\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19} -$
$12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 36\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^3\omega_{19} - 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 - 96\omega_{16}\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2 - 42\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19} +$
$12v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 - 36\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3\omega_{19} + 6v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 + 72\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 36\omega_7^2c_s^4\omega_{11}^3\omega_{19}^2 - 12\omega_{16}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19} +$
$12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^2 - 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^3\omega_{19} - 6\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 + 12\omega_{16}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 + 18\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 18\omega_7^3c_s^4\omega_{11}^3\omega_{19}^2 -$
$12v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 - 12\omega_{16}v_2^2\omega_7^3\omega_{11}^2\omega_{19} - 6v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3\omega_{19} - \omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 - 6v_2^2v_3^2\omega_7^3\omega_{11}^3\omega_{19}^2 +$
$12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19} - 12v_2^2\omega_7^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} + 36\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{19}^2 - 36\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19} + 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 -$
$12\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} + 30\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^3\omega_{19} + 18\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 - 12v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 18\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} +$
$36\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 12\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19}^2 + 6\omega_{16}v_2^2v_3^2\omega_7^3\omega_{11}^3\omega_{19}^2 - 12\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} - 48\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 -$
$12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{19}^2 - 6\omega_{16}v_2^2\omega_7^3\omega_{11}^3\omega_{19}^2 + 12\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^3 - 6\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 - 12\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2$

$C_{54} = -2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 - 3\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 + 4\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 - 24\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 + 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 -$
$4\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{11}^3\omega_{19}^2 + 2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2\omega_{19}^2 - 4\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 - 2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3\omega_{19}^2 - 4\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^3\omega_{19} + 7\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} +$
$12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{19}^2 + 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19} + 9\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}^3\omega_{19} - 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 + 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3\omega_{19} +$
$12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 - 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 8\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 13\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 2\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 -$
$3\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}^3\omega_{19} - 2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2 + 3\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 4\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^2\omega_{19} + 4\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 +$
$8\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^3 - 4\omega_{16}^2\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 - 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{19}^2 + 8\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 5\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - \omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}^2 -$
$2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3\omega_{19}^2 + 6\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3\omega_{19} - 5\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19} + 2\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 + 2\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 + 4\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{11}^3\omega_{19}^2 +$
$\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 + 4\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 + 2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^3\omega_{19}^2 - 4\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}^3 + 4\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{11}^3\omega_{19} - 2\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} -$
$4\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2\omega_{19} + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 8\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 4\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{11}^3\omega_{19} - 4\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - \omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3\omega_{19}^2 -$
$5\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 6\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19} + \omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}^2 - 16\omega_{16}^2\omega_{10}\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 - 2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 -$
$2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}^2 - \omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 3\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3\omega_{19} + 2\omega_{16}^2\omega_{10}v_3^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2 - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3\omega_{19} +$
$4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 4\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{11}^2\omega_{19} + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} - 6\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 15\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 +$
$4\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{19}^2 - 6\omega_{16}^2\omega_{10}v_3^2\omega_7\omega_{23}\omega_{11}^3\omega_{19} + 2\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{11}^3\omega_{19}^2 + 11\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19} - \omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 +$
$2\omega_{16}^2\omega_{10}v_3^2\omega_7\omega_{23}\omega_{11}^3\omega_{19}^2 - 4\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{11}^3\omega_{19} + 4\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}^3 - 8\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 - 7\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} +$
$3\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 - 2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{11}^3\omega_{19}^2 - 4\omega_{16}\omega_{10}\omega_7^2\omega_{11}^3\omega_{19}^2 + 8\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 - 2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 - 8\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} +$
$2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 2\omega_{16}^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 - 4\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}^2 + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3\omega_{19}^2 + 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}^2 -$
$2\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 - 4\omega_{16}^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} + 26\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 - 9\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3\omega_{19} + \omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11}^3\omega_{19}^2$

$C_{55} = -6\omega_{16}\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}\omega_7\omega_{23}c_s^4\omega_{11}^3\omega_{19} - 24\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2 - 144\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 36\omega_{16}v_3^2\omega_7^3c_s^2\omega_{11}^3\omega_{19} -$
$6v_2^2\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 - 24\omega_{16}v_2^2\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} - 54\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 - 36\omega_{16}v_3^2\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 - 24\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 +$
$12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^3 + 18\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19}^2 + 72\omega_{16}v_2^2v_3^2\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2 - 6\omega_{16}\omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_7^2c_s^2\omega_{11}^3\omega_{19} + 24\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 +$
$24\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3\omega_{19} + 6\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}\omega_{19}^2 + 24\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3 - 18\omega_{16}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 24\omega_{16}v_2^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 6\omega_{16}v_2^2\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 -$
$18\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 12\omega_{16}\omega_7^2c_s^4\omega_{11}^3\omega_{19}^2 - 12\omega_{16}\omega_7^3c_s^2\omega_{11}^2\omega_{19} + 18v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_7\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 +$
$36\omega_{16}v_2^2v_3^2\omega_7^2\omega_{11}^3\omega_{19} - 36\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 - 72\omega_{16}v_2^2v_3^2\omega_7\omega_{23}\omega_{11}^3\omega_{19} - 24\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^3\omega_{19} - 12\omega_{16}\omega_7^3c_s^4\omega_{11}^3\omega_{19} +$
$36v_3^2\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{16}v_2^2\omega_7^2\omega_{11}^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^2c_s^2\omega_{11}^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 36\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19} -$
$12v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 36\omega_{16}v_2^2v_3^2\omega_7^2\omega_{11}^3\omega_{19}^2 - 12\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19} - 108\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 4\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2 + 6\omega_{16}\omega_7^3c_s^4\omega_{11}^3\omega_{19}^2 -$
$12\omega_{16}v_2^2\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^2\omega_{11}^3\omega_{19}^2 - 24\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^3 - 12\omega_{16}v_2^2\omega_7^3c_s^2\omega_{11}^3\omega_{19} - 18v_3^2\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 + 36\omega_{16}v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} +$
$78\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} - 24\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 6\omega_{16}\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{16}\omega_7^2c_s^4\omega_{11}^3\omega_{19} + 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{19}^2 +$

$12v_2^2\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 + 36\omega_{16}v_3^2\omega_7^2c_s^2\omega_{11}^3\omega_{19} + 36\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 24\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 6\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 - 12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} +$
$6v_2^2\omega_7^3\omega_{11}^3\omega_{19}^2 + 12\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 36v_2^2v_3^2\omega_7^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} + 12\omega_{16}\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}\omega_7^2c_s^4\omega_{11}^2\omega_{19} +$
$12\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^2\omega_{19} + 12\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 12\omega_{16}\omega_7^3c_s^2\omega_{11}^3\omega_{19} + 24\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2 + 18\omega_{16}\omega_7\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2 -$
$12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3 - 6\omega_{16}v_2^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 36\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}\omega_{19} + 18\omega_{16}v_3^2\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 - 18\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 6\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 -$
$72\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 + 36\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^3 - 36\omega_{16}v_2^2v_3^2\omega_7^3\omega_{11}^3\omega_{19} - 24\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} - 132\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19} +$
$12\omega_{16}v_2^2\omega_7^3\omega_{11}^3\omega_{19} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 24\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 + 6\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 - 84\omega_{16}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 48\omega_{16}v_3^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 +$
$18\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 72\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19} + 6v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - \omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 180\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 +$
$6\omega_{16}v_2^2\omega_7^3\omega_{11}^2\omega_{19}^2 - 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19} - 36\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 + 108\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^3\omega_{19} - 18\omega_{16}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 -$
$12\omega_{16}\omega_{23}c_s^4\omega_{11}^3\omega_{19}^2 - 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19} + 12v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 - 36\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3\omega_{19} + 18v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 + 24\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} +$
$12\omega_7^2c_s^4\omega_{11}^3\omega_{19}^2 + 12\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 60\omega_{16}v_3^2\omega_7\omega_{23}c_s^2\omega_{11}^3\omega_{19} - 36\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^3\omega_{19} - 6\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 + 84\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2 +$
$6\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 - 6\omega_7^3c_s^4\omega_{11}^3\omega_{19}^2 - 36v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 - 12\omega_{16}v_2^2\omega_7^3\omega_{11}^2\omega_{19} - 6v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3\omega_{19} +$
$60\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19} - 18v_2^2v_3^2\omega_7^3\omega_{11}^3\omega_{19}^2 + 36\omega_{16}v_2^2v_3^2\omega_7^3\omega_{11}^2\omega_{19} - 12v_2^2\omega_7^2\omega_{11}^3\omega_{19}^2 + 12\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}c_s^2\omega_{11}^3\omega_{19} +$
$18\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 + 72\omega_{16}v_3^2\omega_7^3\omega_{23}c_s^2\omega_{11}\omega_{19} + 12\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^3\omega_{19} + 6\omega_7^3\omega_{23}c_s^4\omega_{11}^2\omega_{19}^2 - 36v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2\omega_{19}^2 +$
$12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2\omega_{19} + 12\omega_{16}v_2^2\omega_7^2\omega_{23}c_s^2\omega_{11}\omega_{19}^2 + 36\omega_{16}v_2^2v_3^2\omega_7^3\omega_{23}\omega_{19}^2 + 18\omega_{16}v_2^2v_3^2\omega_7^3\omega_{11}^3\omega_{19}^2 - 36\omega_{16}v_2^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19} -$
$12\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 - 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{19}^2 - 6\omega_{16}v_2^2\omega_7^3\omega_{11}^3\omega_{19}^2 - 6\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}^2 - 42\omega_{16}v_3^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3\omega_{19}^2$

$C_{56} = -24v_3^2c_s^2\omega_{11}^3\omega_6 - 4v_3^4\omega_{11}^3\omega_6 - 84v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6 - 20v_3^4\omega_{11}^2\omega_{18}^2\omega_6 - 4c_s^2\omega_{11}\omega_{18}^2\omega_6 - 4c_s^4\omega_{11}^2\omega_6^2 - 4c_s^2\omega_{11}^3\omega_6^2 - 4c_s^4\omega_{11}\omega_{18}\omega_6^2 -$
$32v_3^2\omega_{11}^2\omega_{18}\omega_6^2 + 8c_s^4\omega_{11}^3\omega_{18}\omega_6 - 13v_3^4\omega_{11}^3\omega_{18}\omega_6^2 - 4c_s^4\omega_{11}^3\omega_6 - 51v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2 - 24v_3^2c_s^2\omega_{11}^2\omega_6^2 - 4v_3^4\omega_{11}^2\omega_6^2 + 36v_3^2\omega_{11}\omega_{18}^2\omega_6^2 - 4v_3^2\omega_{11}^3\omega_6^2 +$
$4c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2 - 20v_3^2\omega_{11}\omega_{18}^2\omega_6 + 4v_3^2\omega_{11}^3\omega_6 + 4c_s^2\omega_{11}^2\omega_6^2 - 8c_s^4\omega_{11}^2\omega_{18}^2\omega_6 - 8c_s^2\omega_{11}^2\omega_{18}\omega_6^2 + 4c_s^4\omega_{11}^3\omega_6^2 + 84v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6 + 20v_3^4\omega_{11}^3\omega_{18}\omega_6 -$
$72v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^2 - 20v_3^4\omega_{11}\omega_{18}\omega_6^2 + 4c_s^2\omega_{11}^3\omega_6 + 16v_3^2\omega_{11}^2\omega_{18}\omega_6 - 4c_s^4\omega_{11}^3\omega_{18}\omega_6^2 + 4v_3^2\omega_{11}^2\omega_6^2 + 4v_3^4\omega_{11}^3\omega_6^2 + 24v_3^2c_s^2\omega_{11}^3\omega_6^2 + 13v_3^4\omega_{11}^2\omega_{18}^2\omega_6^2 +$
$51v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 + 12c_s^2\omega_{11}\omega_{18}^2\omega_6^2 - 8v_3^2\omega_{11}^3\omega_{18}^2 + 4c_s^4\omega_{11}\omega_{18}^2\omega_6 - 24v_3^2\omega_{18}^2\omega_6^2 + 20v_3^2\omega_{11}^2\omega_{18}^2\omega_6 + 4c_s^2\omega_{11}^3\omega_{18} + 120v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2 +$
$32v_3^4\omega_{11}^2\omega_{18}\omega_6^2 - 8c_s^2\omega_{11}^3\omega_{18}\omega_6 + 4c_s^2\omega_{11}\omega_{18}\omega_6^2 - 8c_s^2\omega_{18}^2\omega_6^2 - 4c_s^2\omega_{11}^2\omega_{18}^2 + 8v_3^2\omega_{11}^3\omega_{18} + 13v_3^2\omega_{11}^3\omega_{18}\omega_6^2 - 4c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 - 36v_3^4\omega_{11}\omega_{18}^2\omega_6^2 -$
$144v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^2 + 96v_3^2c_s^2\omega_{18}^2\omega_6^2 + 24v_3^4\omega_{18}^2\omega_6^2 + 8c_s^2\omega_{11}^2\omega_{18}^2\omega_6 + 36v_3^2c_s^2\omega_{11}^2\omega_{18}^2 + 8v_3^4\omega_{11}^2\omega_{18}^2 + 72v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6 + 20v_3^4\omega_{11}\omega_{18}^2\omega_6 -$
$4c_s^4\omega_{11}^3\omega_{18} + 20v_3^2\omega_{11}\omega_{18}\omega_6^2 + 8c_s^4\omega_{11}^2\omega_{18}\omega_6^2 - 20v_3^2\omega_{11}^3\omega_{18}\omega_6 - 16v_3^4\omega_{11}^2\omega_{18}\omega_6 - 48v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6 + 4c_s^4\omega_{11}^2\omega_{18}^2 + 8c_s^4\omega_{18}^2\omega_6^2 +$
$4c_s^2\omega_{11}^3\omega_{18}\omega_6^2 - 36v_3^2c_s^2\omega_{11}^3\omega_{18} - 8v_3^4\omega_{11}^3\omega_{18} - 12c_s^4\omega_{11}\omega_{18}^2\omega_6^2 - 13v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2$

$C_{57} = -5c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 48v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6 - 12v_3^4\omega_{11}^2\omega_6^3 - 12v_3^2c_s^2\omega_{11}^2\omega_6^3 - 27v_3^4\omega_{11}^3\omega_{18}\omega_6^3 - 21v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^3 + c_s^4\omega_{11}^2\omega_{18}^2\omega_6^3 +$
$24v_3^2\omega_{11}^2\omega_{18}\omega_6^2 - 12v_3^2\omega_{11}^3\omega_6^3 + 90v_3^2\omega_{11}\omega_{18}^2\omega_6^3 + 12c_s^4\omega_{11}^3\omega_{18}\omega_6 + 48v_3^4\omega_{11}^3\omega_{18}\omega_6^2 + 30v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6^2 + 12v_3^2\omega_{11}^3\omega_6^2 - 60v_3^2\omega_{11}^2\omega_{18}\omega_6^3 -$
$12v_3^2\omega_{11}^3\omega_{18}^2\omega_6 + 6c_s^4\omega_{11}^2\omega_{18}^2\omega_6^2 + 6c_s^4\omega_{11}^3\omega_{18}\omega_6^3 + 12v_3^2\omega_{11}^2\omega_6^3 + 18v_3^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 12c_s^2\omega_{11}^2\omega_{18}\omega_6^2 - 12v_3^2c_s^2\omega_{11}^3\omega_{18}\omega_6 + 12c_s^2\omega_{11}\omega_{18}^2\omega_6^3 -$
$24v_3^4\omega_{11}^3\omega_{18}\omega_6 + 19v_3^4\omega_{11}^2\omega_{18}^2\omega_6^3 + 60v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 12v_3^2c_s^2\omega_{11}^3\omega_6^3 + 12v_3^4\omega_{11}^3\omega_6^3 - 4v_3^2\omega_{11}^3\omega_{18}^2\omega_6^3 - 18c_s^4\omega_{11}^3\omega_{18}\omega_6^2 - 36v_3^2c_s^2\omega_{11}\omega_{18}\omega_6^3 -$
$12v_3^4\omega_{11}^3\omega_6^2 - 12v_3^2c_s^2\omega_{11}^3\omega_6^2 + 6c_s^2\omega_{11}^3\omega_{18}^2\omega_6 - 36v_3^4\omega_{11}\omega_{18}\omega_6^3 + 12v_3^4\omega_{11}^2\omega_{18}^2\omega_6^2 + 162v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 + 12c_s^2\omega_{11}\omega_{18}^2\omega_6^2 + 6c_s^2\omega_{11}^2\omega_{18}\omega_6^3 +$
$27v_3^2\omega_{11}^3\omega_{18}\omega_6^3 + 13c_s^4\omega_{11}^3\omega_{18}^2\omega_6^2 - 12c_s^2\omega_{18}^2\omega_6^3 - 12v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^2 - 24v_3^4\omega_{11}^2\omega_{18}\omega_6^2 - 90v_3^4\omega_{11}\omega_{18}^2\omega_6^3 - 12c_s^2\omega_{11}^3\omega_{18}\omega_6 - 306v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^3 -$
$c_s^2\omega_{11}^2\omega_{18}^2\omega_6^3 - 48v_3^2c_s^2\omega_{11}^3\omega_{18}^2 - c_s^4\omega_{11}^3\omega_{18}^2\omega_6^3 - 72v_3^2\omega_{18}^2\omega_6^3 - 48v_3^2\omega_{11}^3\omega_{18}\omega_6^2 + 12v_3^4\omega_{11}^3\omega_{18}^2\omega_6 + 102v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6 - 6c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 +$
$12c_s^4\omega_{11}^3\omega_{18}^2 - 108v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_6^2 + 54v_3^2c_s^2\omega_{11}^2\omega_{18}\omega_6^3 + 60v_3^4\omega_{11}^2\omega_{18}\omega_6^3 - 81v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^2 - 18v_3^4\omega_{11}^3\omega_{18}^2\omega_6^2 + 12c_s^4\omega_{18}^2\omega_6^3 - 6c_s^2\omega_{11}^3\omega_{18}\omega_6^3 -$
$19v_3^2\omega_{11}^2\omega_{18}^2\omega_6^3 + 12c_s^4\omega_{11}^2\omega_{18}\omega_6^2 - 12c_s^4\omega_{11}\omega_{18}^2\omega_6^3 + 24v_3^2\omega_{11}^3\omega_{18}\omega_6 + 18c_s^2\omega_{11}^3\omega_{18}\omega_6^2 + 12v_3^2c_s^2\omega_{11}^3\omega_{18}^2\omega_6^3 + 72v_3^4\omega_{18}^2\omega_6^3 + 252v_3^2c_s^2\omega_{18}^2\omega_6^3 +$
$4v_3^4\omega_{11}^3\omega_{18}^2\omega_6^2 - 12c_s^4\omega_{11}\omega_{18}^2\omega_6^2 - 6c_s^4\omega_{11}^2\omega_{18}\omega_6^3 - 24c_s^4\omega_{11}^3\omega_{18}^2\omega_6 + 36v_3^2\omega_{11}\omega_{18}\omega_6^3 - 12v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2$

$C_{58} = -8\omega_{11}^3\omega_6^2 + 32c_s^2\omega_{11}\omega_{18}^2\omega_6 + 16\omega_{11}^2\omega_{18}\omega_6 + 16c_s^2\omega_{11}^3\omega_6^2 + 104v_3^2\omega_{11}^2\omega_{18}\omega_6^2 - 24\omega_{11}\omega_{18}^2\omega_6 - 16c_s^2\omega_{11}^2\omega_{18}\omega_6 - 120v_3^2\omega_{11}\omega_{18}^2\omega_6^2 +$
$16v_3^2\omega_{11}^3\omega_6^2 + 64v_3^2\omega_{11}\omega_{18}^2\omega_6 - 16v_3^2\omega_{11}^3\omega_6 - 16c_s^2\omega_{11}^2\omega_6^2 + 56c_s^2\omega_{11}^2\omega_{18}\omega_6^2 + 48\omega_{11}\omega_{18}^2\omega_6^2 + 8\omega_{11}^2\omega_6^2 - 16c_s^2\omega_{11}^3\omega_6 - 48v_3^2\omega_{11}^2\omega_{18}\omega_6 -$
$16v_3^2\omega_{11}^2\omega_6^2 + 8\omega_{11}^3\omega_6 - 40\omega_{11}\omega_{18}\omega_6^2 - 72c_s^2\omega_{11}\omega_{18}^2\omega_6^2 + 28v_3^2\omega_{11}^2\omega_{18}^2 + 80v_3^2\omega_{18}^2\omega_6^2 - 68v_3^2\omega_{11}^2\omega_{18}^2\omega_6 - 20c_s^2\omega_{11}^3\omega_{18} + 44c_s^2\omega_{11}^3\omega_{18}\omega_6 +$
$12\omega_{11}^3\omega_{18} - 32c_s^2\omega_{11}\omega_{18}\omega_6^2 - 17\omega_{11}^2\omega_{18}^2\omega_6^2 + 48c_s^2\omega_{18}^2\omega_6^2 + 20c_s^2\omega_{11}^2\omega_{18}^2 - 28v_3^2\omega_{11}^3\omega_{18} - 43v_3^2\omega_{11}^3\omega_{18}\omega_6^2 - 12\omega_{11}^2\omega_{18}^2 + 24\omega_{11}\omega_{18}\omega_6^2 - 32\omega_{18}^2\omega_6^2 +$
$25c_s^2\omega_{11}^2\omega_{18}^2\omega_6^2 - 28\omega_{11}^3\omega_{18}\omega_6 - 44c_s^2\omega_{11}^2\omega_{18}^2\omega_6 + 17\omega_{11}^3\omega_{18}\omega_6^2 - 64v_3^2\omega_{11}\omega_{18}\omega_6^2 + 68v_3^2\omega_{11}^3\omega_{18}\omega_6 - 25c_s^2\omega_{11}^3\omega_{18}\omega_6^2 + 28\omega_{11}^2\omega_{18}^2\omega_6 + 43v_3^2\omega_{11}^2\omega_{18}^2\omega_6^2$

$C_{59} = -12\omega_7^2c_s^4\omega_{11}\omega_{19}^2 + 8v_3^2\omega_{11}^3\omega_{19} - 4v_3^4\omega_7\omega_{11}^3 + 20v_3^4\omega_7\omega_{11}\omega_{19}^2 - 4c_s^2\omega_{11}^2\omega_{19}^2 - 13v_3^4\omega_7^2\omega_{11}^3\omega_{19} + 4\omega_7^2c_s^2\omega_{11}^2 + 120v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19} -$
$8\omega_7c_s^2\omega_{11}^3\omega_{19} + 16v_3^2\omega_7\omega_{11}^2\omega_{19} + 72v_3^2\omega_7c_s^2\omega_{11}\omega_{19}^2 - 4\omega_7^2c_s^2\omega_{11}^3 + 4c_s^2\omega_{11}^3\omega_{19} + 13v_3^4\omega_7^2\omega_{11}^2\omega_{19}^2 - 8v_3^2\omega_{11}^2\omega_{19}^2 + 4\omega_7^2c_s^2\omega_{11}\omega_{19} + 96v_3^2\omega_7^2c_s^2\omega_{19}^2 +$
$8\omega_7c_s^2\omega_{11}^2\omega_{19}^2 + 20v_3^2\omega_7^2\omega_{11}\omega_{19} + 24v_3^2\omega_7^2c_s^2\omega_{11}^3 - 36v_3^2c_s^2\omega_{11}^3\omega_{19} - 8v_3^4\omega_{11}^3\omega_{19} + 4v_3^2\omega_7\omega_{11}^3 + 12\omega_7^2c_s^2\omega_{11}\omega_{19}^2 - 51v_3^2\omega_7^2c_s^2\omega_{11}^3\omega_{19} + 4c_s^4\omega_{11}^2\omega_{19}^2 -$
$20v_3^2\omega_7\omega_{11}^3\omega_{19} - 4\omega_7c_s^4\omega_{11}^3 + 36v_3^2\omega_7^2\omega_{11}\omega_{19}^2 + 32v_3^4\omega_7^2\omega_{11}^2\omega_{19} - 8\omega_7^2c_s^2\omega_{19}^2 + 8\omega_7c_s^4\omega_{11}^3\omega_{19} + 51v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 + 20v_3^2\omega_7\omega_{11}^2\omega_{19}^2 -$
$4c_s^4\omega_{11}^3\omega_{19} + 36v_3^2c_s^2\omega_{11}^2\omega_{19}^2 + 8v_3^4\omega_{11}^2\omega_{19}^2 - 24v_3^2\omega_7^2c_s^2\omega_{11}^2 - 4\omega_7^2c_s^4\omega_{11}\omega_{19} - 8\omega_7c_s^4\omega_{11}^2\omega_{19}^2 + 13v_3^2\omega_7^2\omega_{11}^3\omega_{19} + 4\omega_7^2c_s^4\omega_{11}^3 - 20v_3^2\omega_7\omega_{11}\omega_{19}^2 -$
$144v_3^2\omega_7^2c_s^2\omega_{11}\omega_{19}^2 + 4v_3^2\omega_7^2\omega_{11}^2 - 48v_3^2\omega_7c_s^2\omega_{11}^2\omega_{19} + 4\omega_7^2c_s^2\omega_{11}^3\omega_{19} - 24v_3^2\omega_7c_s^2\omega_{11}^3 + 8\omega_7^2c_s^4\omega_{11}^2\omega_{19} + 24v_3^4\omega_7^2\omega_{19}^2 + 4\omega_7c_s^4\omega_{11}\omega_{19}^2 -$
$16v_3^4\omega_7\omega_{11}^2\omega_{19} - 4\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 4v_3^2\omega_7^2\omega_{11}^3 - 13v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 - 4\omega_7^2c_s^4\omega_{11}^2 - 20v_3^4\omega_7^2\omega_{11}\omega_{19} - 36v_3^4\omega_7^2\omega_{11}\omega_{19}^2 + 20v_3^4\omega_7\omega_{11}^3\omega_{19} - 4v_3^4\omega_7^2\omega_{11}^2 -$
$4\omega_7^2c_s^4\omega_{11}^3\omega_{19} - 8\omega_7^2c_s^2\omega_{11}^2\omega_{19} + 84v_3^2\omega_7c_s^2\omega_{11}^3\omega_{19} - 24v_3^2\omega_7^2\omega_{19}^2 - 32v_3^2\omega_7^2\omega_{11}^2\omega_{19} - 4\omega_7c_s^2\omega_{11}\omega_{19}^2 + 4v_3^4\omega_7^2\omega_{11}^3 + 4\omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 + 4\omega_7c_s^2\omega_{11}^3 -$
$20v_3^4\omega_7\omega_{11}^2\omega_{19}^2 + 8\omega_7^2c_s^4\omega_{19}^2 - 72v_3^2\omega_7^2c_s^2\omega_{11}\omega_{19} - 84v_3^2\omega_7c_s^2\omega_{11}^2\omega_{19}^2$

$C_{60} = -12\omega_7^2c_s^4\omega_{11}\omega_{19}^2 - 36v_3^4\omega_7^3\omega_{11}\omega_{19} + 48v_3^4\omega_7^2\omega_{11}^3\omega_{19} + 60v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 - 12v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19} - 12\omega_7c_s^2\omega_{11}^3\omega_{19} + 12c_s^4\omega_{11}^3\omega_{19}^2 -$
$19v_3^2\omega_7^3\omega_{11}^2\omega_{19}^2 + 12v_3^4\omega_7^2\omega_{11}^2\omega_{19}^2 - 24\omega_7c_s^4\omega_{11}^3\omega_{19}^2 - 21v_3^2\omega_7^2c_s^2\omega_{11}^3\omega_{19} + 12\omega_7^2c_s^2\omega_{11}\omega_{19}^2 - 48v_3^2c_s^2\omega_{11}^3\omega_{19}^2 + 27v_3^2\omega_7^3\omega_{11}^3\omega_{19} -$
$81v_3^2\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 - 12v_3^2\omega_7\omega_{11}^3\omega_{19}^2 - 12v_3^2\omega_7^2c_s^2\omega_{11}^3 + 12\omega_7^3c_s^4\omega_{19}^2 - 4v_3^2\omega_7^3\omega_{11}^3\omega_{19}^2 + 12\omega_7^2c_s^2\omega_{11}\omega_{19}^2 + 30v_3^2\omega_7^2c_s^2\omega_{11}^3\omega_{19} + 24v_3^2\omega_7\omega_{11}^3\omega_{19} -$
$24v_3^4\omega_7^2\omega_{11}^2\omega_{19} + 12v_3^2\omega_7^3c_s^2\omega_{11}^3\omega_{19}^2 + 12\omega_7c_s^4\omega_{11}^3\omega_{19} + 6\omega_7c_s^2\omega_{11}^3\omega_{19}^2 + 162v_3^2\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 - 60v_3^2\omega_7^3\omega_{11}^2\omega_{19} - 12\omega_7^3c_s^4\omega_{11}\omega_{19}^2 -$
$90v_3^4\omega_7^3\omega_{11}\omega_{19}^2 - 18v_3^4\omega_7^2\omega_{11}^3\omega_{19}^2 + 54v_3^2\omega_7^3c_s^2\omega_{11}^2\omega_{19} + 252v_3^2\omega_7^3c_s^2\omega_{19}^2 - 48v_3^2\omega_7^2\omega_{11}^3\omega_{19} - 108v_3^2\omega_7^2c_s^2\omega_{11}\omega_{19}^2 - 72v_3^2\omega_7^3\omega_{19}^2 + 36v_3^2\omega_7^3\omega_{11}\omega_{19} +$
$18\omega_7^2c_s^2\omega_{11}^3\omega_{19} + \omega_7^3c_s^4\omega_{11}^2\omega_{19}^2 + 19v_3^4\omega_7^3\omega_{11}^2\omega_{19}^2 + 12\omega_7^2c_s^4\omega_{11}^2\omega_{19} - 12v_3^4\omega_7^3\omega_{11}^2 - 36v_3^2\omega_7^3c_s^2\omega_{11}\omega_{19} + 102v_3^2\omega_7c_s^2\omega_{11}^3\omega_{19}^2 + 6\omega_7^3c_s^4\omega_{11}^3\omega_{19} -$
$6\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 + 12v_3^2\omega_7^2\omega_{11}^3 - 12v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 + 12v_3^4\omega_7\omega_{11}^3\omega_{19}^2 + 12v_3^4\omega_7^3\omega_{11}^3 - 27v_3^4\omega_7^3\omega_{11}^3\omega_{19} + 6\omega_7^3c_s^2\omega_{11}^2\omega_{19} + 13\omega_7^2c_s^4\omega_{11}^3\omega_{19}^2 -$
$24v_3^4\omega_7\omega_{11}^3\omega_{19} + 72v_3^4\omega_7^3\omega_{19}^2 - 18\omega_7^2c_s^4\omega_{11}^3\omega_{19} - \omega_7^3c_s^2\omega_{11}^2\omega_{19}^2 + 4v_3^4\omega_7^3\omega_{11}^3\omega_{19}^2 - 12\omega_7^2c_s^2\omega_{11}^2\omega_{19} - \omega_7^3c_s^4\omega_{11}^3\omega_{19}^2 - 12v_3^2\omega_7c_s^2\omega_{11}^3\omega_{19} +$
$12v_3^2\omega_7^3\omega_{11}^2 + 24v_3^2\omega_7^2\omega_{11}^2\omega_{19} - 12v_3^2\omega_7^3c_s^2\omega_{11}^2 - 12\omega_7^3c_s^2\omega_{19}^2 - 12v_3^4\omega_7^2\omega_{11}^3 - 6\omega_7^3c_s^2\omega_{11}^3\omega_{19} + 6\omega_7^2c_s^4\omega_{11}^2\omega_{19}^2 + 60v_3^4\omega_7^3\omega_{11}^2\omega_{19} -$
$306v_3^2\omega_7^3c_s^2\omega_{11}\omega_{19}^2 + 18v_3^2\omega_7^2\omega_{11}^3\omega_{19}^2 + 12v_3^2\omega_7^3c_s^2\omega_{11}^3 - 6\omega_7^3c_s^4\omega_{11}^2\omega_{19} - 5\omega_7^2c_s^2\omega_{11}^3\omega_{19}^2 + 90v_3^2\omega_7^3\omega_{11}\omega_{19}^2 - 48v_3^2\omega_7c_s^2\omega_{11}^2\omega_{19}^2 - 12v_3^2\omega_7^3\omega_{11}^3$

$C_{61} = -28v_3^2\omega_{11}^3\omega_{19} + 28\omega_7\omega_{11}^2\omega_{19}^2 + 20c_s^2\omega_{11}^2\omega_{19}^2 - 16\omega_7^2c_s^2\omega_{11}^2 + 44\omega_7c_s^2\omega_{11}^3\omega_{19} - 48v_3^2\omega_7\omega_{11}^2\omega_{19} - 12\omega_{11}^2\omega_{19}^2 + 16\omega_7^2c_s^2\omega_{11}^3 - 20c_s^2\omega_{11}^3\omega_{19} +$

$28v_3^2\omega_{11}^2\omega_{19}^2 - 28\omega_7\omega_{11}^3\omega_{19} + 48\omega_7^2\omega_{11}\omega_{19}^2 + 12\omega_{11}^3\omega_{19} - 32\omega_7^2c_s^2\omega_{11}\omega_{19} - 44\omega_7c_s^2\omega_{11}^2\omega_{19}^2 - 64v_3^2\omega_7^2\omega_{11}\omega_{19} - 16v_3^2\omega_7\omega_{11}^3 - 72\omega_7^2c_s^2\omega_{11}\omega_{19}^2 - 16\omega_7c_s^2\omega_{11}^2\omega_{19} + 68v_3^2\omega_7\omega_{11}^3\omega_{19} - 120v_3^2\omega_7^2\omega_{11}\omega_{19}^2 + 48\omega_7^2c_s^2\omega_{19}^2 + 24\omega_7^2\omega_{11}\omega_{19} - 68v_3^2\omega_7\omega_{11}^2\omega_{19}^2 + 8\omega_7\omega_{11}^3 + 16\omega_7\omega_{11}^2\omega_{19} - 43v_3^2\omega_7^2\omega_{11}^3\omega_{19} + 64v_3^2\omega_7\omega_{11}\omega_{19}^2 - 16v_3^2\omega_7^2\omega_{11}^2 - 25\omega_7^2c_s^2\omega_{11}^3\omega_{19} - 8\omega_7^2\omega_{11}^3 + 25\omega_7^2c_s^2\omega_{11}^2\omega_{19}^2 + 16v_3^2\omega_7^2\omega_{11}^3 + 43v_3^2\omega_7^2\omega_{11}^2\omega_{19}^2 + 8\omega_7^2\omega_{11}^2 - 40\omega_7^2\omega_{11}^2\omega_{19} - 17\omega_7^2\omega_{11}^2\omega_{19}^2 + 56\omega_7^2c_s^2\omega_{11}^2\omega_{19} + 80v_3^2\omega_7^2\omega_{19}^2 + 104v_3^2\omega_7^2\omega_{11}\omega_{19} + 32\omega_7c_s^2\omega_{11}\omega_{19}^2 + 17\omega_7^2\omega_{11}^3\omega_{19} - 24\omega_7\omega_{11}\omega_{19}^2 - 32\omega_7^2\omega_{19}^2 - 16\omega_7c_s^2\omega_{11}^3$

$C_{62} = 12 - 216c_s^4\omega_{11} - 156v_3^2 + 234v_3^2\omega_{11} - 132c_s^2 - 98v_3^2\omega_{11}^2 - 5c_s^4\omega_{11}^3 - 18\omega_{11} + 10v_3^2\omega_{11}^3 + 82c_s^4\omega_{11}^2 + 672v_3^2c_s^2 + 8\omega_{11}^2 + 144c_s^4 - 1008v_3^2c_s^2\omega_{11} - 216v_3^4\omega_{11} - \omega_{11}^3 + 198c_s^2\omega_{11} - 9v_3^4\omega_{11}^3 - 34v_3^2c_s^2\omega_{11}^3 - 78c_s^2\omega_{11}^2 + 144v_3^4 + 404v_3^2c_s^2\omega_{11}^2 + 90v_3^4\omega_{11}^2 + 6c_s^2\omega_{11}^3$

$C_{63} = 12 - 36c_s^4\omega_{11} - 252v_3^2 + 378v_3^2\omega_{11} - 36c_s^2 - 154v_3^2\omega_{11}^2 - c_s^4\omega_{11}^3 - 18\omega_{11} + 14v_3^2\omega_{11}^3 + 14c_s^4\omega_{11}^2 + 432v_3^2c_s^2 + 8\omega_{11}^2 + 24c_s^4 - 648v_3^2c_s^2\omega_{11} - 756v_3^4\omega_{11} - \omega_{11}^3 + 54c_s^2\omega_{11} - 29v_3^4\omega_{11}^3 - 18v_3^2c_s^2\omega_{11}^3 - 22c_s^2\omega_{11}^2 + 504v_3^4 + 252v_3^2c_s^2\omega_{11}^2 + 310v_3^4\omega_{11}^2 + 2c_s^2\omega_{11}^3$

2.4 CLBM1

2.4.1 Definitions

Collision operator $\boldsymbol{C}$:

$$\boldsymbol{C}\left(\boldsymbol{f}\right) = \mathbf{K}^{-1}\mathbf{S}\left(\boldsymbol{\kappa}^{(eq)} - \mathbf{K}\boldsymbol{f}\right),$$

where

$$\mathbf{S} = \mathrm{diag}(\omega_1, \omega_2, \cdots, \omega_{27}),$$

$\omega_1, \omega_2, \cdots, \omega_{27} \in (0, 2)$.
Matrix $\mathbf{K}$ corresponds to the transformation matrix to the central moment basis defined by

$$\begin{aligned}\boldsymbol{\kappa} = \Big(&k_{(0,0,0)}, k_{(1,0,0)}, k_{(0,1,0)}, k_{(0,0,1)}, k_{(1,1,0)}, k_{(1,0,1)}, k_{(0,1,1)}, k_{(1,1,1)}, k_{(2,0,0)},\\ &k_{(0,2,0)}, k_{(0,0,2)}, k_{(2,1,0)}, k_{(2,0,1)}, k_{(2,1,1)}, k_{(1,2,0)}, k_{(0,2,1)}, k_{(1,2,1)}, k_{(1,0,2)},\\ &k_{(0,1,2)}, k_{(1,1,2)}, k_{(2,2,0)}, k_{(2,0,2)}, k_{(0,2,2)}, k_{(2,2,1)}, k_{(2,1,2)}, k_{(1,2,2)}, k_{(2,2,2)}\Big)^T,\end{aligned}$$

and is given by

$$\begin{aligned}
\mathbf{K}_{1,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,0,0)}, & \mathbf{K}_{2,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,0,0)}, & \mathbf{K}_{3,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,1,0)},\\
\mathbf{K}_{4,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,0,1)}, & \mathbf{K}_{5,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,1,0)}, & \mathbf{K}_{6,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,0,1)},\\
\mathbf{K}_{7,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,1,1)}, & \mathbf{K}_{8,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,1,1)}, & \mathbf{K}_{9,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,0,0)},\\
\mathbf{K}_{10,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,2,0)}, & \mathbf{K}_{11,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,0,2)}, & \mathbf{K}_{12,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,1,0)},\\
\mathbf{K}_{13,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,0,1)}, & \mathbf{K}_{14,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,1,1)}, & \mathbf{K}_{15,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,2,0)},\\
\mathbf{K}_{16,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,2,1)}, & \mathbf{K}_{17,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,2,1)}, & \mathbf{K}_{18,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,0,2)},\\
\mathbf{K}_{19,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,1,2)}, & \mathbf{K}_{20,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,1,2)}, & \mathbf{K}_{21,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,2,0)},\\
\mathbf{K}_{22,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,0,2)}, & \mathbf{K}_{23,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,2,2)}, & \mathbf{K}_{24,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,2,1)},\\
\mathbf{K}_{25,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,1,2)}, & \mathbf{K}_{26,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,2,2)}, & \mathbf{K}_{27,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,2,2)},
\end{aligned}$$

$\forall i \in \{1, 2, \cdots, 27\}$.
The equilibrium central moments are defined as

$$\boldsymbol{\kappa}^{(eq)} = \mathbf{K}\mathbf{M}^{-1}\boldsymbol{\mu}^{(eq)},$$

i.e.,

$$\boldsymbol{\kappa}^{(eq)} = \Big(\rho, 0, 0, 0, 0, 0, 0, 0, \rho c_s^2, \rho c_s^2, \rho c_s^2, 0, 0, 0, 0, 0, 0, 0, 0, 0, \rho c_s^4, \rho c_s^4, \rho c_s^4, 0, 0, 0, \rho c_s^6\Big)^T.$$

2.4.2 Conservation of mass: ρ

$$\frac{\partial \rho}{\partial t} + \frac{v_1\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_1} + \frac{\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l v_2}{\delta_t}\frac{\partial \rho}{\partial x_2} + \frac{\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_3} + \frac{\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-1+v_1^2+3c_s^2)\frac{v_1\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} +$$
$$(-1+3v_1^2+c_s^2)\frac{\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+v_2^2+3c_s^2)\frac{\delta_l^3v_2}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + (-1+3v_2^2+c_s^2)\frac{\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} -$$
$$\frac{\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+3c_s^2+v_3^2)\frac{v_3\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}$$
$$+ (-3v_1^4\omega_9 - 12v_1^2\omega_9c_s^2 + \omega_9c_s^2 + 6v_1^4 + 2c_s^4 - 6v_1^2 - \omega_9c_s^4 - 2c_s^2 + 3v_1^2\omega_9 + 24v_1^2c_s^2)\frac{\delta_l^4}{24\omega_9\delta_t}\frac{\partial^4 \rho}{\partial x_1^4} +$$
$$(-4+2\omega_9-3\omega_9c_s^2+10v_1^2+6c_s^2-5v_1^2\omega_9)\frac{v_1\delta_l^4\rho}{12\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} +$$
$$(3\omega_9-\omega_{12}-9\omega_9c_s^2+v_1^2\omega_{12}+3\omega_9\omega_{12}c_s^2+3\omega_{12}c_s^2-3v_1^2\omega_9+v_1^2\omega_9\omega_{12}-\omega_9\omega_{12})\frac{v_1\delta_l^4\rho}{12\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} +$$
$$(-2+\omega_5)\frac{\delta_l^4c_s^4}{6\omega_5\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_2^2} +$$
$$(-\omega_{15}-\omega_{15}\omega_{10}+3\omega_{15}c_s^2+3\omega_{10}-9\omega_{10}c_s^2-3v_2^2\omega_{10}+v_2^2\omega_{15}+3\omega_{15}\omega_{10}c_s^2+v_2^2\omega_{15}\omega_{10})\frac{\delta_l^4v_2\rho}{12\omega_{15}\delta_t\omega_{10}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$(-12v_2^2\omega_{10}c_s^2-3v_2^4\omega_{10}-\omega_{10}c_s^4+6v_2^4+2c_s^4+\omega_{10}c_s^2+24v_2^2c_s^2+3v_2^2\omega_{10}-6v_2^2-2c_s^2)\frac{\delta_l^4}{24\delta_t\omega_{10}}\frac{\partial^4 \rho}{\partial x_2^4} +$$
$$(-4+2\omega_{10}-3\omega_{10}c_s^2-5v_2^2\omega_{10}+10v_2^2+6c_s^2)\frac{\delta_l^4v_2\rho}{12\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$(3\omega_9-9\omega_9c_s^2+v_1^2\omega_9\omega_{13}-\omega_9\omega_{13}-\omega_{13}-3v_1^2\omega_9+3\omega_9\omega_{13}c_s^2+3\omega_{13}c_s^2+v_1^2\omega_{13})\frac{v_1\delta_l^4\rho}{12\omega_9\delta_t\omega_{13}}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$(v_2^2\omega_{16}\omega_{10}+3\omega_{16}\omega_{10}c_s^2-\omega_{16}+3\omega_{10}+v_2^2\omega_{16}-9\omega_{10}c_s^2-3v_2^2\omega_{10}+3\omega_{16}c_s^2-\omega_{16}\omega_{10})\frac{\delta_l^4v_2\rho}{12\delta_t\omega_{16}\omega_{10}}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$(-2+\omega_6)\frac{\delta_l^4c_s^4}{6\omega_6\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_3^2} + (-2+\omega_7)\frac{\delta_l^4c_s^4}{6\delta_t\omega_7}\frac{\partial^4 \rho}{\partial x_2^2\partial x_3^2} +$$
$$(v_3^2\omega_{18}-\omega_{18}-9c_s^2\omega_{11}+3\omega_{18}c_s^2+v_3^2\omega_{18}\omega_{11}-\omega_{18}\omega_{11}+3\omega_{11}+3\omega_{18}c_s^2\omega_{11}-3v_3^2\omega_{11})\frac{v_3\delta_l^4\rho}{12\omega_{18}\delta_t\omega_{11}}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} +$$
$$(-9c_s^2\omega_{11}+3\omega_{19}c_s^2\omega_{11}-\omega_{19}+3\omega_{19}c_s^2+v_3^2\omega_{19}+v_3^2\omega_{19}\omega_{11}-\omega_{19}\omega_{11}+3\omega_{11}-3v_3^2\omega_{11})\frac{v_3\delta_l^4\rho}{12\omega_{19}\delta_t\omega_{11}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$(6v_3^4+c_s^2\omega_{11}-12v_3^2c_s^2\omega_{11}+24v_3^2c_s^2-3v_3^4\omega_{11}+2c_s^4-c_s^4\omega_{11}-2c_s^2-6v_3^2+3v_3^2\omega_{11})\frac{\delta_l^4}{24\delta_t\omega_{11}}\frac{\partial^4 \rho}{\partial x_3^4} +$$
$$(-4-3c_s^2\omega_{11}+6c_s^2+10v_3^2+2\omega_{11}-5v_3^2\omega_{11})\frac{v_3\delta_l^4\rho}{12\delta_t\omega_{11}}\frac{\partial^4 v_3}{\partial x_3^4} = 0.$$

2.4.3 Conservation of momentum: ρv_1

$$v_1\frac{\partial \rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (v_1^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_1} + \frac{2v_1\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1\delta_lv_2}{\delta_t}\frac{\partial \rho}{\partial x_2} + \frac{\delta_lv_2\rho}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3v_1\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_3} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_3} +$$
$$\frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_9-2\omega_9c_s^2+6v_1^2+4c_s^2-3v_1^2\omega_9)\frac{\delta_l^2}{\omega_9\delta_t}\frac{\partial \rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + (2-\omega_9)\frac{3v_1\delta_l^2\rho}{\omega_9\delta_t}\left(\frac{\partial v_1}{\partial x_1}\right)^2 +$$
$$(-2+\omega_5)\frac{\delta_l^2c_s^2}{2\omega_5\delta_t}\frac{\partial \rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{\delta_l^2c_s^2}{2\omega_5\delta_t}\frac{\partial \rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + (-2+\omega_6)\frac{\delta_l^2c_s^2}{2\omega_6\delta_t}\frac{\partial \rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{\delta_l^2c_s^2}{2\omega_6\delta_t}\frac{\partial \rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} +$$
$$(-2+\omega_9-3\omega_9c_s^2+2v_1^2+6c_s^2-v_1^2\omega_9)\frac{v_1\delta_l^2}{2\omega_9\delta_t}\frac{\partial^2 \rho}{\partial x_1^2} + (-2+\omega_9-\omega_9c_s^2+6v_1^2+2c_s^2-3v_1^2\omega_9)\frac{\delta_l^2\rho}{2\omega_9\delta_t}\frac{\partial^2 v_1}{\partial x_1^2} +$$
$$(-2+\omega_5)\frac{\delta_l^2c_s^2\rho}{2\omega_5\delta_t}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2+\omega_5)\frac{\delta_l^2c_s^2\rho}{2\omega_5\delta_t}\frac{\partial^2 v_1}{\partial x_2^2} + (-2+\omega_6)\frac{\delta_l^2c_s^2\rho}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2+\omega_6)\frac{\delta_l^2c_s^2\rho}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\omega_9^2\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} +$$
$$(-24+24\omega_9-36\omega_9c_s^2+60v_1^2+5\omega_9^2c_s^2+36c_s^2-4\omega_9^2-60v_1^2\omega_9+11v_1^2\omega_9^2)\frac{v_1\delta_l^3\rho}{6\omega_9^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_2\frac{v_1\delta_l^3\rho}{12\omega_5\omega_9^2\omega_{12}\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$(-12+12\omega_5-\omega_5^2)\frac{\delta_l^3c_s^4}{6\omega_5^2\delta_t}\frac{\partial^3 \rho}{\partial x_1\partial x_2^2} - \frac{v_1\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+v_2^2+3c_s^2)\frac{v_1\delta_l^3v_2}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + C_3\frac{\delta_l^3v_2\rho}{6\omega_5\omega_{15}\delta_t}\frac{\partial^3 v_1}{\partial x_2^3} +$$
$$(-1+3v_2^2+c_s^2)\frac{v_1\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_4\frac{v_1\delta_l^3\rho}{12\omega_9^2\omega_6\delta_t\omega_{13}}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{v_1\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + (-12+12\omega_6-\omega_6^2)\frac{\delta_l^3c_s^4}{6\omega_6^2\delta_t}\frac{\partial^3 \rho}{\partial x_1\partial x_3^2} -$$
$$\frac{v_1\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{v_1\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+3c_s^2+v_3^2)\frac{v_3v_1\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + C_5\frac{v_3\delta_l^3\rho}{6\omega_{18}\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{v_1\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$C_6\frac{v_1\delta_l^4}{12\omega_9^3\delta_t}\frac{\partial^4 \rho}{\partial x_1^4} + C_7\frac{\delta_l^4\rho}{12\omega_9^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_8\frac{\delta_l^4\rho}{12\omega_5^3\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_9\frac{v_1\delta_l^4c_s^2}{12\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_2^2} +$$
$$C_{10}\frac{\delta_l^4c_s^2\rho}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{11}\frac{\delta_l^4v_2c_s^2}{12\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}\delta_t\omega_{10}}\frac{\partial^4 \rho}{\partial x_1\partial x_2^3} +$$
$$(-\omega_{15}-\omega_{15}\omega_{10}+3\omega_{15}c_s^2+3\omega_{10}-9\omega_{10}c_s^2-3v_2^2\omega_{10}+v_2^2\omega_{15}+3\omega_{15}\omega_{10}c_s^2+v_2^2\omega_{15}\omega_{10})\frac{v_1\delta_l^4v_2\rho}{12\omega_{15}\delta_t\omega_{10}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$C_{12}\frac{\delta_l^4c_s^2\rho}{12\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} +$$

$$(-12v_2^2\omega_{10}c_s^2 - 3v_2^4\omega_{10} - \omega_{10}c_s^4 + 6v_2^4 + 2c_s^4 + \omega_{10}c_s^2 + 24v_2^2c_s^2 + 3v_2^2\omega_{10} - 6v_2^2 - 2c_s^2)\frac{v_1\delta_l^4}{24\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_2^4} +$$
$$C_{13}\frac{\delta_l^4\rho}{24\omega_5^3\omega_{15}^2\delta_t}\frac{\partial^4 v_1}{\partial x_2^4} + (-4 + 2\omega_{10} - 3\omega_{10}c_s^2 - 5v_2^2\omega_{10} + 10v_2^2 + 6c_s^2)\frac{v_1\delta_l^4 v_2\rho}{12\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^4} + C_{14}\frac{\delta_l^4\rho}{12\omega_9^3\omega_6^3\delta_t\omega_{13}^2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$C_{15}\frac{\delta_l^4 c_s^4\rho}{12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\delta_t\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} +$$
$$(v_2^2\omega_{16}\omega_{10} + 3\omega_{16}\omega_{10}c_s^2 - \omega_{16} + 3\omega_{10} + v_2^2\omega_{16} - 9\omega_{10}c_s^2 - 3v_2^2\omega_{10} + 3\omega_{16}c_s^2 - \omega_{16}\omega_{10})\frac{v_1\delta_l^4 v_2\rho}{12\delta_t\omega_{16}\omega_{10}}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$C_{16}\frac{v_1\delta_l^4 c_s^2}{12\omega_{18}\omega_9^3\omega_6^2\omega_{22}\delta_t\omega_{13}^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{17}\frac{\delta_l^4 c_s^2\rho}{12\omega_{18}\omega_9^2\omega_6^3\omega_{22}\delta_t\omega_{13}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{18}\frac{\delta_l^4}{2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\delta_t\omega_{13}\omega_{20}\omega_{14}\omega_8}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{19}\frac{\delta_l^4\rho}{2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\delta_t\omega_{13}\omega_{20}\omega_{14}\omega_8}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{20}\frac{\delta_l^4\rho}{12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{21}\frac{v_3\delta_l^4\rho}{\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\delta_t\omega_{13}\omega_{20}\omega_{14}\omega_8}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{22}\frac{\delta_l^4}{12\omega_5\omega_{18}\omega_{15}\omega_6\delta_t\omega_7\omega_{20}\omega_{17}\omega_8}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} +$$
$$C_{23}\frac{\delta_l^4\rho}{4\omega_5^2\omega_{18}\omega_{15}\omega_6^2\delta_t\omega_{20}\omega_{17}\omega_8}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} + C_{24}\frac{\delta_l^4 v_2\rho}{2\omega_5\omega_{18}\omega_{15}\omega_6\delta_t\omega_{20}\omega_{17}\omega_8}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{25}\frac{\delta_l^4\rho}{4\omega_5\omega_{18}\omega_{15}\omega_6\delta_t\omega_{20}\omega_{17}\omega_8}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} +$$
$$C_{26}\frac{v_3\delta_l^4 c_s^2}{12\omega_{18}^2\omega_9\omega_6^2\omega_{22}\delta_t\omega_{13}\omega_{11}}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} +$$
$$(v_3^2\omega_{18} - \omega_{18} - 9c_s^2\omega_{11} + 3\omega_{18}c_s^2 + v_3^2\omega_{18}\omega_{11} - \omega_{18}\omega_{11} + 3\omega_{11} + 3\omega_{18}c_s^2\omega_{11} - 3v_3^2\omega_{11})\frac{v_3 v_1\delta_l^4\rho}{12\omega_{18}\delta_t\omega_{11}}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} +$$
$$C_{27}\frac{\delta_l^4 c_s^2\rho}{12\omega_{18}\omega_9\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$(-9c_s^2\omega_{11} + 3\omega_{19}c_s^2\omega_{11} - \omega_{19} + 3\omega_{19}c_s^2 + v_3^2\omega_{19} + v_3^2\omega_{19}\omega_{11} - \omega_{19}\omega_{11} + 3\omega_{11} - 3v_3^2\omega_{11})\frac{v_3 v_1\delta_l^4\rho}{12\omega_{19}\delta_t\omega_{11}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$(6v_3^4 + c_s^2\omega_{11} - 12v_3^2c_s^2\omega_{11} + 24v_3^2c_s^2 - 3v_3^4\omega_{11} + 2c_s^4 - c_s^4\omega_{11} - 2c_s^2 - 6v_3^2 + 3v_3^2\omega_{11})\frac{v_1\delta_l^4}{24\delta_t\omega_{11}}\frac{\partial^4\rho}{\partial x_3^4} + C_{28}\frac{\delta_l^4\rho}{24\omega_{18}^2\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_3^4}$$
$$+ (-4 - 3c_s^2\omega_{11} + 6c_s^2 + 10v_3^2 + 2\omega_{11} - 5v_3^2\omega_{11})\frac{v_3 v_1\delta_l^4\rho}{12\delta_t\omega_{11}}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

$$C_1 = -36v_1^4\omega_9 - 144v_1^2\omega_9c_s^2 + 12\omega_9c_s^2 + 36v_1^4 + 7v_1^4\omega_9^2 + \omega_9^2c_s^4 + 12c_s^4 - 36v_1^2 - 12\omega_9c_s^4 + 24v_1^2\omega_9^2c_s^2 - \omega_9^2c_s^2 - 12c_s^2 + 36v_1^2\omega_9 - 7v_1^2\omega_9^2 + 144v_1^2c_s^2$$

$$C_2 = 12\omega_5v_1^2\omega_9^2 + 6\omega_5\omega_9\omega_{12} - 18\omega_5\omega_9\omega_{12}c_s^2 - 12\omega_5\omega_{12} + 6v_1^2\omega_9^2\omega_{12} - 6\omega_9^2\omega_{12} + 18\omega_9^2\omega_{12}c_s^2 - 6\omega_5v_1^2\omega_9\omega_{12} + 36\omega_5\omega_9^2c_s^2 + 36\omega_5\omega_{12}c_s^2 - 12\omega_5v_1^2\omega_9 + 12\omega_5v_1^2\omega_{12} - 36\omega_5\omega_9c_s^2 - 36\omega_9^2c_s^2 - 12\omega_5\omega_9^2 - 3\omega_5v_1^2\omega_9^2\omega_{12} + 12\omega_9^2 - 12v_1^2\omega_9^2 + 12\omega_5\omega_9 - 11\omega_5\omega_9^2\omega_{12}c_s^2 + 3\omega_5\omega_9^2\omega_{12}$$

$$C_3 = 6 - 3\omega_5 - \omega_5v_2^2\omega_{15} - 3\omega_{15} + 9\omega_{15}c_s^2 - 3\omega_5\omega_{15}c_s^2 - 6v_2^2 - 18c_s^2 + 3\omega_5v_2^2 + 9\omega_5c_s^2 + \omega_5\omega_{15} + 3v_2^2\omega_{15}$$

$$C_4 = 18\omega_9^2\omega_{13}c_s^2 - 18\omega_9\omega_6\omega_{13}c_s^2 + 12v_1^2\omega_9^2\omega_6 - 12\omega_9^2\omega_6 - 3v_1^2\omega_9^2\omega_6\omega_{13} + 3\omega_9^2\omega_6\omega_{13} + 36\omega_6\omega_{13}c_s^2 + 36\omega_9^2\omega_6c_s^2 - 6v_1^2\omega_9\omega_6\omega_{13} + 6v_1^2\omega_9^2\omega_{13} - 11\omega_9^2\omega_6\omega_{13}c_s^2 + 6\omega_9\omega_6\omega_{13} - 6\omega_9^2\omega_{13} - 36\omega_9\omega_6c_s^2 - 36\omega_9^2c_s^2 - 12\omega_6\omega_{13} + 12\omega_9^2 + 12v_1^2\omega_6\omega_{13} - 12v_1^2\omega_9\omega_6 - 12v_1^2\omega_9^2 + 12\omega_9\omega_6$$

$$C_5 = 6 + 3v_3^2\omega_{18} - 3\omega_{18} + 9\omega_{18}c_s^2 - 3\omega_{18}\omega_6c_s^2 - 3\omega_6 + 9\omega_6c_s^2 - 18c_s^2 - v_3^2\omega_{18}\omega_6 + \omega_{18}\omega_6 - 6v_3^2 + 3v_3^2\omega_6$$

$$C_6 = 12 - 216v_1^4\omega_9 - 5\omega_9^3c_s^4 - 18\omega_9 - 1008v_1^2\omega_9c_s^2 - 9v_1^4\omega_9^3 + 198\omega_9c_s^2 + 144v_1^4 + 90v_1^4\omega_9^2 + 82\omega_9^2c_s^4 + 144c_s^4 - 156v_1^2 - \omega_9^3 - 216\omega_9c_s^4 + 404v_1^2\omega_9^2c_s^2 - 78\omega_9^2c_s^2 - 132c_s^2 + 8\omega_9^2 + 234v_1^2\omega_9 - 98v_1^2\omega_9^2 + 672v_1^2c_s^2 + 10v_1^2\omega_9^3 + 6\omega_9^3c_s^2 - 34v_1^2\omega_9^3c_s^2$$

$$C_7 = 12 - 756v_1^4\omega_9 - \omega_9^3c_s^4 - 18\omega_9 - 648v_1^2\omega_9c_s^2 - 29v_1^4\omega_9^3 + 54\omega_9c_s^2 + 504v_1^4 + 310v_1^4\omega_9^2 + 14\omega_9^2c_s^4 + 24c_s^4 - 252v_1^2 - \omega_9^3 - 36\omega_9c_s^4 + 252v_1^2\omega_9^2c_s^2 - 22\omega_9^2c_s^2 - 36c_s^2 + 8\omega_9^2 + 378v_1^2\omega_9 - 154v_1^2\omega_9^2 + 432v_1^2c_s^2 + 14v_1^2\omega_9^3 + 2\omega_9^3c_s^2 - 18v_1^2\omega_9^3c_s^2$$

$$C_8 = 12\omega_5^3\omega_9\omega_{12}^2c_s^2 + 39\omega_5^3v_1^2\omega_9^3\omega_{12} - 3\omega_5^2v_1^2\omega_9^3\omega_{12}^2c_s^2 - 5\omega_5^2\omega_9^3\omega_{12}^2c_s^2 + 6\omega_5^2v_1^2\omega_9^3\omega_{12}^2 + 72\omega_5^3v_1^4\omega_9^2\omega_{12} + \omega_5^3\omega_9^2\omega_{12}^2c_s^4 - 18\omega_5^2\omega_9^3\omega_{12}c_s^4 + 252\omega_5^3v_1^2\omega_{12}^2c_s^2 + 12\omega_5^3\omega_{12}^2c_s^4 + 72\omega_5^3v_1^4\omega_{12}^2 - 19\omega_5^3v_1^2\omega_9^2\omega_{12}^2 + 36\omega_5^2v_1^4\omega_9^3\omega_{12} + 6\omega_5^3\omega_9^2\omega_{12}c_s^2 + 4\omega_5^3v_1^4\omega_9^3\omega_{12}^2 - 99\omega_5^3v_1^2\omega_9^3\omega_{12}c_s^2 - 18\omega_5v_1^2\omega_9^3\omega_{12}^2c_s^2 - 36\omega_5^2v_1^4\omega_9^3 - 12\omega_5^2\omega_9^2\omega_{12}c_s^2 - 39\omega_5^3v_1^4\omega_9^3\omega_{12} - 108\omega_5^3v_1^2\omega_{9\omega_{12}}c_s^2 + 6\omega_5^3\omega_9^3\omega_{12}c_s^4 - 36\omega_5^3v_1^2\omega_9^3 - 6\omega_5^2v_1^4\omega_9^3\omega_{12}^2 - 72\omega_5^3v_1^2\omega_9^2\omega_{12} + 36\omega_5^2v_1^2\omega_9^2\omega_{12}c_s^2 - 24\omega_5\omega_9^3\omega_{12}^2c_s^4 + 60\omega_5^3v_1^2\omega_9^2\omega_{12}^2c_s^2 - 12\omega_5\omega_9^3\omega_{12}c_s^2 + 12\omega_5^2\omega_9\omega_{12}^2c_s^2 + 19\omega_5^3v_1^4\omega_9^2\omega_{12}^2 - 36\omega_5^2v_1^2\omega_9^3\omega_{12} + 6\omega_5^2\omega_9^2\omega_{12}^2c_s^4 - 4\omega_5^3v_1^2\omega_9^3\omega_{12}^2 - 36\omega_5^2v_1^2\omega_9\omega_{12}^2c_s^2 + 36\omega_5^3v_1^2\omega_9^2 + 198\omega_5^3v_1^2\omega_9^2\omega_{12}c_s^2 - 72\omega_5^3v_1^2\omega_{12}^2 - 90\omega_5^3v_1^4\omega_9\omega_{12}^2 + 6\omega_5\omega_9^3\omega_{12}^2c_s^2 + 108\omega_5^3v_1^2\omega_9^3c_s^2 + 12\omega_5^2\omega_9^2\omega_{12}c_s^4 - 6\omega_5^3\omega_9^3\omega_{12}c_s^2 - 6\omega_5^2\omega_9^2\omega_{12}^2c_s^2 - 306\omega_5^3v_1^2\omega_9\omega_{12}^2c_s^2 - \omega_5^3\omega_9^3\omega_{12}^2c_s^4 + 12\omega_5\omega_9^3\omega_{12}c_s^4 - 12\omega_5^2\omega_9\omega_{12}^2c_s^4 + 18\omega_5^2v_1^2\omega_9^2\omega_{12}^2c_s^2 + 36\omega_5^3v_1^2\omega_9\omega_{12} + 12\omega_9^3\omega_{12}^2c_s^4 + 13\omega_5^2\omega_9^3\omega_{12}^2c_s^4 - 108\omega_5^3v_1^2\omega_9^2c_s^2 + 90\omega_5^3v_1^2\omega_9\omega_{12}^2 - \omega_5^3\omega_9^2\omega_{12}^2c_s^2 + 12\omega_5^3v_1^2\omega_9^3\omega_{12}^2c_s^2 - 12\omega_5^3\omega_9\omega_{12}^2c_s^4 - 36\omega_5^3v_1^4\omega_9^2 + 36\omega_5v_1^2\omega_9^3\omega_{12}c_s^2 + 36\omega_5^2v_1^2\omega_9^3 + 54\omega_5^2v_1^2\omega_9^3\omega_{12}c_s^2 + 18\omega_5^2\omega_9^3\omega_{12}c_s^2 + 36\omega_5^3v_1^4\omega_9^3 - 12\omega_5^3\omega_{12}^2c_s^2 - 36\omega_5^3v_1^4\omega_9\omega_{12} - 6\omega_5^3\omega_9^2\omega_{12}c_s^4 - 108\omega_5^2v_1^2\omega_9^3c_s^2$$

$$C_9 = -\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5\omega_{21}v_1^2\omega_9^2\omega_{12}^2 + 12\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 12\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9^2 - 12\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 6\omega_5^2\omega_9^3\omega_{12}^2 + 36\omega_5\omega_{15}\omega_9^3\omega_{12}c_s^2 - 12\omega_5\omega_{21}v_1^2\omega_{15}\omega_9^3 - 12\omega_5^2v_1^2\omega_{15}\omega_9^3\omega_{12} - 18\omega_5^2\omega_9^3\omega_{12}^2c_s^2 - 6\omega_5^2v_1^2\omega_9^3\omega_{12}^2 + 6\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}^2 + 12\omega_5v_1^2\omega_{15}\omega_9^3\omega_{12} - 36\omega_5^2\omega_{15}\omega_9^3\omega_{12}c_s^2 + 12\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9^3 + 36\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2c_s^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 12\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 5\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2c_s^2 + 6\omega_5^2\omega_{21}v_1^2\omega_9^2\omega_{12}^2 - 6\omega_5^2v_1^2\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2c_s^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12\omega_5^2v_1^2\omega_{15}\omega_9^2\omega_{12} - 12\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 12\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12} + 36\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2c_s^2 - 12\omega_5v_1^2\omega_{15}\omega_9^3\omega_{12}^2 + 12\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 40\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2c_s^2 + 2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 6\omega_5^2v_1^2\omega_{15}\omega_9^3\omega_{12}^2 + 54\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}c_s^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_5\omega_{21}\omega_{15}\omega_9^3 - 18\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2c_s^2 + 6\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 6\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 12\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12\omega_5v_1^2\omega_9^3\omega_{12}^2 + 18\omega_5\omega_{21}v_1^2\omega_{15}\omega_9^3\omega_{12} - 6\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2c_s^2 + 36\omega_5\omega_9^3\omega_{12}^2c_s^2 + 12\omega_{21}v_1^2\omega_{15}\omega_9^3\omega_{12}^2 + 36\omega_5^2\omega_{15}\omega_9^2\omega_{12}c_s^2 - 12\omega_5\omega_{15}\omega_9^3\omega_{12} - 36\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2c_s^2 + \omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9^3\omega_{12}^2 + 18\omega_5\omega_{21}v_1^2\omega_{15}\omega_9^2\omega_{12}^2 -$$

$36\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 + 18\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 54\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}c_s^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_9^2c_s^2 + 18\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2c_s^2 -$
$2\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36\omega_{21}\omega_{15}\omega_9^3\omega_{12}c_s^2 - 12\omega_{21}v_1^2\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_5\omega_{21}\omega_{15}\omega_9^3c_s^2 +$
$18\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2c_s^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}c_s^2 - 12\omega_5\omega_9^3\omega_{12}^2 + 12\omega_5\omega_{15}\omega_9^3\omega_{12}^2 + 36\omega_5^2\omega_{21}\omega_{15}\omega_9^3c_s^2 + 54\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2c_s^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9^3 -$
$6\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9^3\omega_{12} - 36\omega_5\omega_{21}\omega_9^2\omega_{12}^2c_s^2 - 36\omega_5\omega_{15}\omega_9^3\omega_{12}^2c_s^2 - 6\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 12\omega_5\omega_{21}v_1^2\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_{21}v_1^2\omega_{15}\omega_9^3\omega_{12} + 12\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_{12}^2$

$C_{10} = -72\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9^2 + 18\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}c_s^2 - 6\omega_5^3\omega_{21}\omega_9\omega_{12} - 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 36\omega_5^3v_1^2\omega_{15}\omega_9^2 -$
$6\omega_5^3\omega_9^2\omega_{12}c_s^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 6\omega_5^3\omega_{21}\omega_9\omega_{12}c_s^2 - 36\omega_5\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12} + 36\omega_5^2v_1^2\omega_9^2\omega_{12} + 36\omega_5\omega_{21}v_1^2\omega_{15}\omega_9^2 - 12\omega_5^2\omega_9^2\omega_{12} - 6\omega_5^3\omega_{15}\omega_9^2\omega_{12} +$
$12\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12\omega_5^2\omega_9^2\omega_{12}c_s^2 + 12\omega_5^3\omega_{15}\omega_9c_s^2 + 6\omega_5^3\omega_{15}\omega_9^2\omega_{12}c_s^2 - 36\omega_5^2v_1^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 72\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12} +$
$18\omega_5^3\omega_{21}v_1^2\omega_{15}\omega_{12} - 18\omega_5^3v_1^2\omega_9^2\omega_{12} + 12\omega_5^2\omega_{21}\omega_{15}\omega_9c_s^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9^2 + 12\omega_5^2\omega_{21}\omega_9\omega_{12} + 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2c_s^2 + 36\omega_5^3v_1^2\omega_{15}\omega_9 -$
$4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}c_s^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}c_s^2 - 18\omega_5^3v_1^2\omega_{15}\omega_9\omega_{12} + 18\omega_5^3\omega_{21}v_1^2\omega_9\omega_{12} + 36\omega_5^2v_1^2\omega_{15}\omega_9^2 - 12\omega_5^2\omega_{15}\omega_9^2 + 36\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9 -$
$12\omega_{21}\omega_{15}\omega_9^2\omega_{12}c_s^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9c_s^2 - 6\omega_5^3\omega_{15}\omega_9\omega_{12}c_s^2 + 6\omega_5^3\omega_9^2\omega_{12} - 36\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_{12} + 12\omega_5\omega_{21}\omega_{15}\omega_9^2c_s^2 - 12\omega_5^2\omega_{15}\omega_9^2\omega_{12}c_s^2 +$
$18\omega_5^3v_1^2\omega_{15}\omega_9^2\omega_{12} - 36\omega_5^3\omega_{21}v_1^2\omega_{15}\omega_9 + 24\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12\omega_5^3\omega_{15}\omega_9^2c_s^2 - 36\omega_5^2\omega_{21}v_1^2\omega_9\omega_{12} - 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}c_s^2 -$
$12\omega_5^2\omega_{21}\omega_{15}\omega_9 - 12\omega_5^3\omega_{15}\omega_9 - 24\omega_5^2\omega_{21}\omega_{15}\omega_9^2c_s^2 + 12\omega_5^2\omega_{15}\omega_9^2c_s^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 + 24\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 24\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_5^3\omega_{15}\omega_9^2 +$
$36\omega_5^3\omega_{21}v_1^2\omega_{15}\omega_9^2 + 12\omega_5^3\omega_{21}\omega_{15}\omega_9 + 6\omega_5^3\omega_{15}\omega_9\omega_{12} - \omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}c_s^2 - 18\omega_5^3\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12} - 12\omega_5^2\omega_{21}\omega_9\omega_{12}c_s^2 + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}$

$C_{11} = 5\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6\omega_5^2\omega_{15}^2\omega_{12}\omega_{10} + 12\omega_5^2\omega_{21}v_2^2\omega_{15}^2\omega_9 + 12\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 18\omega_5\omega_{21}v_2^2\omega_{15}\omega_9\omega_{12}\omega_{10} + 12\omega_5^2v_2^2\omega_{15}^2\omega_{10} -$
$18\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_{21}v_2^2\omega_9\omega_{12}\omega_{10} - 6\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 12\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10} - 12\omega_5^2\omega_{21}v_2^2\omega_{15}^2 - 36\omega_{21}\omega_{15}^2\omega_9\omega_{12}c_s^2 -$
$6\omega_5^2v_2^2\omega_{15}^2\omega_{12}\omega_{10} - 18\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36\omega_5^2\omega_{15}^2\omega_{10}c_s^2 - 36\omega_5^2\omega_{21}\omega_{15}^2c_s^2 - \omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10} - 12\omega_5\omega_{21}v_2^2\omega_{15}^2\omega_9 - 15\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}c_s^2 +$
$12\omega_5v_2^2\omega_{15}\omega_9\omega_{12}\omega_{10} + 6\omega_5^2\omega_{21}v_2^2\omega_9\omega_{12}\omega_{10} + \omega_5^2\omega_{21}v_2^2\omega_{15}^2\omega_9\omega_{12}\omega_{10} - 36\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10} - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9 +$
$6\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10} + 54\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}c_s^2 + 3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10} + 12\omega_{21}v_2^2\omega_{15}^2\omega_9\omega_{12}\omega_{10} - 9\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 -$
$12\omega_5\omega_{15}^2\omega_9\omega_{10} + 18\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}c_s^2 + 36\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_5^2\omega_{15}^2\omega_{10} - 12\omega_5\omega_{21}v_2^2\omega_{15}^2\omega_9\omega_{12}\omega_{10} - 36\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10}c_s^2 +$
$36\omega_5^2\omega_{21}\omega_{15}^2\omega_9c_s^2 - 18\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 54\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 6\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_5\omega_{21}\omega_{15}^2\omega_9c_s^2 - 36\omega_5\omega_{21}\omega_9\omega_{12}\omega_{10}c_s^2 -$
$12\omega_{21}v_2^2\omega_{15}^2\omega_9\omega_{12} + 18\omega_5^2\omega_{15}^2\omega_9\omega_{12}\omega_{10}c_s^2 + 3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} - 5\omega_5^2\omega_{21}v_2^2\omega_{15}^2\omega_9\omega_{12} + 6\omega_5^2v_2^2\omega_{15}^2\omega_9\omega_{12}\omega_{10} + 12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} +$
$36\omega_5\omega_{15}^2\omega_9\omega_{10}c_s^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} + 12\omega_5\omega_{21}\omega_{15}^2\omega_9 - 6\omega_5^2\omega_{15}^2\omega_9\omega_{12}\omega_{10} + 12\omega_5\omega_{21}\omega_9\omega_{12}\omega_{10} + 18\omega_5^2\omega_{21}\omega_9\omega_{12}\omega_{10}c_s^2 -$
$36\omega_5\omega_{15}^2\omega_9\omega_{12}\omega_{10}c_s^2 - 3\omega_5^2\omega_{21}v_2^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 12\omega_5^2v_2^2\omega_{15}^2\omega_9\omega_{10} - 12\omega_5v_2^2\omega_{15}^2\omega_9\omega_{12}\omega_{10} + 18\omega_5\omega_{21}v_2^2\omega_{15}^2\omega_9\omega_{12} + 12\omega_5^2\omega_{15}^2\omega_9\omega_{10} +$
$12\omega_5v_2^2\omega_{15}^2\omega_9\omega_{10} - 36\omega_5^2\omega_{15}^2\omega_9\omega_{10}c_s^2 - 12\omega_{21}v_2^2\omega_{15}\omega_9\omega_{12}\omega_{10} + 6\omega_5^2\omega_{21}v_2^2\omega_{15}^2\omega_{12} + 36\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5\omega_{15}^2\omega_9\omega_{12}\omega_{10} - 6\omega_5^2\omega_{21}\omega_9\omega_{12}\omega_{10}$

$C_{12} = -\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 36\omega_5\omega_{21}v_2^2\omega_{15}\omega_9\omega_{12} - 5\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 + 5\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_5^2v_2^2\omega_{15}\omega_9\omega_{10} - 6\omega_5^3\omega_{21}\omega_9\omega_{12}\omega_{10} +$
$36\omega_5\omega_{21}v_2^2\omega_9\omega_{12}\omega_{10} - 36\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 18\omega_5^3v_2^2\omega_{15}\omega_{12}\omega_{10} - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_5^2\omega_{15}\omega_9\omega_{10} + 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 36\omega_5^3\omega_{21}v_2^2\omega_{15}\omega_9 -$
$36\omega_5^3\omega_{21}v_2^2\omega_{15} + 12\omega_5^2\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5^3\omega_{15}\omega_9\omega_{10} - 54\omega_5^2\omega_{21}v_2^2\omega_9\omega_{12}\omega_{10} + 12\omega_5^3\omega_{21}\omega_{15} - 12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10} -$
$12\omega_5^2\omega_{21}\omega_{15}\omega_9c_s^2 - 18\omega_5^3v_2^2\omega_9\omega_{12}\omega_{10} - 6\omega_5^3\omega_{15}\omega_{12}\omega_{10}c_s^2 + 12\omega_5^2\omega_{15}\omega_9\omega_{10}c_s^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}c_s^2 - 5\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 +$
$54\omega_5^2\omega_{21}v_2^2\omega_{15}\omega_9\omega_{12} + 6\omega_5^3\omega_{21}\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5^3\omega_{21}\omega_{15}\omega_9c_s^2 - 12\omega_5^2\omega_9\omega_{12}\omega_{10} - 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10} + 18\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12}\omega_{10} + 36\omega_5^3v_2^2\omega_{15}\omega_{10} +$
$12\omega_5^3\omega_{15}\omega_{10}c_s^2 - 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 + 12\omega_5\omega_{21}\omega_9\omega_{12}\omega_{10}c_s^2 + 6\omega_5^3\omega_{15}\omega_{12}\omega_{10} +$
$\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} - 12\omega_5^3\omega_{15}\omega_9\omega_{10}c_s^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9 + 36\omega_5^2v_2^2\omega_9\omega_{12}\omega_{10} - 12\omega_5^3\omega_{21}\omega_{15}c_s^2 - 15\omega_5^3\omega_{21}v_2^2\omega_{15}\omega_9\omega_{12} - 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 +$
$18\omega_5^3\omega_{21}v_2^2\omega_{15}\omega_{12} - 18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_5\omega_{21}\omega_9\omega_{12}\omega_{10} - 18\omega_5^2\omega_{21}\omega_9\omega_{12}\omega_{10}c_s^2 - 36\omega_5^3v_2^2\omega_{15}\omega_9\omega_{10} - 3\omega_5^2\omega_{21}v_2^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 12\omega_5^3\omega_{15}\omega_{10} -$
$12\omega_5^3\omega_{21}\omega_{15}\omega_9 - 36\omega_5^2\omega_{21}v_2^2\omega_{15}\omega_9 - 6\omega_5^3\omega_9\omega_{12}\omega_{10}c_s^2 + 6\omega_5^3\omega_9\omega_{12}\omega_{10} + 18\omega_5^3\omega_{21}v_2^2\omega_9\omega_{12}\omega_{10} + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 18\omega_5^2\omega_{21}\omega_9\omega_{12}\omega_{10}$

$C_{13} = -36\omega_5^3v_2^2 + 6\omega_5^3\omega_{15}c_s^4 - 12\omega_5^2v_2^2\omega_{15}^2c_s^2 + 108\omega_5^3v_2^2c_s^2 - 3\omega_5^3v_2^2\omega_{15}^2 - 12\omega_5^2v_2^4\omega_{15}^2 + \omega_5^3\omega_{15}^2c_s^2 + 72\omega_5^2v_2^4\omega_{15} + 12\omega_5\omega_{15}^2c_s^2 + 72\omega_5^2v_2^2 + 30\omega_5^3v_2^2\omega_{15} +$
$24\omega_{15}^2c_s^4 + 24\omega_5^2\omega_{15}^2c_s^4 + 72\omega_5v_2^2\omega_{15}c_s^2 + 24\omega_5^2\omega_{15}c_s^2 + 24\omega_5\omega_{15}c_s^4 + 6\omega_5^3v_2^2\omega_{15}^2c_s^2 - 72\omega_5^2v_2^4 + 3\omega_5^3v_2^4\omega_{15}^2 - 8\omega_5^2\omega_{15}^2c_s^2 - 36\omega_5v_2^2\omega_{15}^2c_s^2 + 12\omega_5^2v_2^2\omega_{15}^2 -$
$48\omega_5\omega_{15}^2c_s^4 - 216\omega_5^2v_2^2c_s^2 - 72\omega_5^3v_2^2\omega_{15}c_s^2 - 24\omega_5\omega_{15}c_s^2 - 24\omega_5^2\omega_{15}c_s^4 + 36\omega_5^3v_2^4 - 6\omega_5^3\omega_{15}c_s^2 - 72\omega_5^2v_2^2\omega_{15} - 3\omega_5^3\omega_{15}^2c_s^4 + 144\omega_5^2v_2^2\omega_{15}c_s^2 - 30\omega_5^3v_2^4\omega_{15}$

$C_{14} = 13\omega_9^3\omega_6^2\omega_{13}^2c_s^4 - 36v_1^2\omega_9\omega_6^2\omega_{13}^2c_s^2 + 19v_1^4\omega_9^2\omega_6^3\omega_{13}^2 + 36v_1^2\omega_9^3\omega_6^2 - \omega_9^2\omega_6^3\omega_{13}^2c_s^2 - 36v_1^2\omega_9^3\omega_6^2\omega_{13} + 12\omega_6^3\omega_{13}^2c_s^4 + 54v_1^2\omega_9^3\omega_6^2\omega_{13}c_s^2 +$
$6\omega_9^3\omega_6\omega_{13}^2c_s^2 + 12\omega_9\omega_6^2\omega_{13}^2c_s^2 - 36v_1^2\omega_9^3\omega_6^3 - 108v_1^2\omega_9^3\omega_6^2c_s^2 + 60v_1^2\omega_9^2\omega_6^3\omega_{13}^2c_s^2 + 12\omega_9^3\omega_{6\omega13}c_s^4 + 36v_1^2\omega_9\omega_6^3\omega_{13} + 18\omega_9^3\omega_6^2\omega_{13}c_s^2 + 72v_1^4\omega_6^3\omega_{13}^2 -$
$36v_1^4\omega_9^2\omega_6^3 - 4v_1^2\omega_9^3\omega_6^3\omega_{13}^2 - 6\omega_9^2\omega_6^3\omega_{13}c_s^4 - 18v_1^2\omega_9^3\omega_6\omega_{13}^2c_s^2 + 90v_1^2\omega_9\omega_6^3\omega_{13}^2 - 12\omega_9\omega_6^3\omega_{13}^2c_s^4 + 12v_1^2\omega_9^3\omega_6^3\omega_{13}^2c_s^2 + 39v_1^2\omega_9^3\omega_6^3\omega_{13} - 36v_1^4\omega_9^3\omega_6^2 +$
$6\omega_9^3\omega_6^3\omega_{13}c_s^4 - 108v_1^2\omega_9\omega_6^3\omega_{13}c_s^2 - 12\omega_9^2\omega_6^2\omega_{13}c_s^2 + 6v_1^2\omega_9^3\omega_6^2\omega_{13}^2 + 36v_1^4\omega_9^3\omega_6^3 + 6\omega_9^2\omega_6^2\omega_{13}^2c_s^4 - 72v_1^2\omega_6^3\omega_{13}^2 + 72v_1^4\omega_9^2\omega_6^3\omega_{13} +$
$36v_1^2\omega_9^2\omega_6^2\omega_{13}c_s^2 + 36v_1^2\omega_9^2\omega_6^3 + 108v_1^2\omega_9^3\omega_6^3c_s^2 - 6\omega_9^3\omega_6^3\omega_{13}c_s^2 + 12\omega_9^2\omega_6^2\omega_{13}c_s^4 - 19v_1^2\omega_9^2\omega_6^3\omega_{13}^2 + 12\omega_9^3\omega_{13}^2c_s^4 + 12\omega_9\omega_6^3\omega_{13}^2c_s^2 + 36v_1^4\omega_9^3\omega_6^2\omega_{13} +$
$18v_1^2\omega_9^2\omega_6^2\omega_{13}^2c_s^2 - 99v_1^2\omega_9^3\omega_6^3\omega_{13}c_s^2 + 4v_1^4\omega_9^3\omega_6^3\omega_{13}^2 - 306v_1^2\omega_9\omega_6^3\omega_{13}^2c_s^2 - \omega_9^3\omega_6^3\omega_{13}^2c_s^4 - 36v_1^4\omega_9\omega_6^3\omega_{13} - 6\omega_9^2\omega_6^2\omega_{13}^2c_s^2 - 39v_1^4\omega_9^3\omega_6^3\omega_{13} -$
$12\omega_6^3\omega_{13}^2c_s^2 - 108v_1^2\omega_9^2\omega_6^3c_s^2 - 90v_1^4\omega_9\omega_6^3\omega_{13}^2 + 198v_1^2\omega_9^2\omega_6^3\omega_{13}c_s^2 - 24\omega_9^3\omega_{6\omega13}^2c_s^4 - 5\omega_9^3\omega_6^2\omega_{13}^2c_s^2 + 252v_1^2\omega_6^3\omega_{13}^2c_s^2 + \omega_9^2\omega_6^3\omega_{13}^2c_s^4 +$
$36v_1^2\omega_9^3\omega_6\omega_{13}c_s^2 - 18\omega_9^3\omega_6^2\omega_{13}c_s^4 - 6v_1^4\omega_9^3\omega_6^2\omega_{13}^2 + 6\omega_9^2\omega_6^3\omega_{13}c_s^2 - 3v_1^2\omega_9^3\omega_6^2\omega_{13}^2c_s^2 - 12\omega_9\omega_6^2\omega_{13}^2c_s^4 - 12\omega_9^3\omega_6\omega_{13}c_s^2 - 72v_1^2\omega_9^2\omega_6^3\omega_{13}$

$C_{15} = -12\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8 + 6\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_7\omega_{17}\omega_8 + 12\omega_5\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 +$
$12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17} - 12\omega_5^3\omega_{15}\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8 - 6\omega_5^3\omega_9\omega_{12}\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 - 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8 +$
$12\omega_5^3\omega_{15}\omega_9\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8 - 24\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{17}\omega_{14}\omega_8 - 2\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 +$
$6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 - 12\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_7\omega_{17}\omega_8 + 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 + 12\omega_5^2\omega_{15}\omega_9\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8 -$
$18\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_{17}\omega_{14}\omega_8 - 18\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 - \omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 + 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14} +$
$24\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{14} + 10\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8 + 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8 -$
$12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7\omega_{17} + 12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{13}\omega_{17}\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{17}\omega_{14}\omega_8 - 12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_7\omega_{17}\omega_8 -$
$12\omega_5^3\omega_{15}\omega_9\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8 + 12\omega_5^2\omega_9\omega_{12}\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 + 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8 -$
$12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{14} - 12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{17}\omega_{14}\omega_8 - 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8 -$
$18\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8 - 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17} - 12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8 - 12\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8 -$
$12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14} + 12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14} - 12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14} + 12\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8 +$
$12\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7\omega_{17}\omega_8 - 12\omega_5^2\omega_{15}\omega_9\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8$

$C_{16} = -36\omega_{18}\omega_9^3\omega_6\omega_{13}^2c_s^2 - 12v_1^2\omega_{18}\omega_9^3\omega_{22}\omega_{13} + 36\omega_{18}\omega_9^3\omega_6^2\omega_{22}c_s^2 + v_1^2\omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13}^2 + 18v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13} + 12\omega_{18}\omega_9^3\omega_6\omega_{13}^2 +$
$12v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{13} + 36\omega_9^3\omega_6\omega_{13}^2c_s^2 - 12\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 6v_1^2\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2 + 2\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2 + 12\omega_{18}\omega_9^3\omega_{22}\omega_{13} - 36\omega_{18}\omega_9^3\omega_6^2\omega_{13}c_s^2 -$

$40\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13}^2c_s^2 - 12v_1^2\omega_{18}\omega_9^3\omega_6\omega_{13}^2 - 12\omega_{18}\omega_9^2\omega_6^2\omega_{13} - 6\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2 + 12v_1^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 6\omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13} - 36\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2c_s^2 +$
$36\omega_{18}\omega_9^2\omega_6^2\omega_{13}c_s^2 + 18\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2c_s^2 + 6\omega_{18}\omega_9^2\omega_6^2\omega_{13}^2 + 12v_1^2\omega_{18}\omega_9^3\omega_6\omega_{13} - \omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13}^2 - 18\omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13}c_s^2 - 12\omega_{18}\omega_9^3\omega_{22}\omega_{13}^2 -$
$18\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13} + 12v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 - 6v_1^2\omega_9^3\omega_6^2\omega_{13}^2 - 2v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2 - 36\omega_{18}\omega_9^2\omega_6^2\omega_{22}c_s^2 - 6v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{13}^2 - 12\omega_{18}\omega_9^3\omega_6\omega_{13} -$
$6\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2c_s^2 + 6\omega_9^3\omega_6^2\omega_{13}^2 + 12v_1^2\omega_{18}\omega_9^3\omega_{22}\omega_{13}^2 - 36\omega_{18}\omega_9^3\omega_{22}\omega_{13}c_s^2 - 12\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 - 6v_1^2\omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13} + 12\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13}^2 +$
$12v_1^2\omega_9^3\omega_6\omega_{13}^2 - 12v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} - 12v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{18}\omega_9^3\omega_6^2\omega_{13} + 36\omega_{18}\omega_9^3\omega_{22}\omega_{13}^2c_s^2 + 54\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}c_s^2 - 12\omega_9^3\omega_6\omega_{13}^2 -$
$18\omega_{18}\omega_9^2\omega_6^2\omega_{13}^2c_s^2 - 36\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}c_s^2 + 12\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 5\omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13}^2c_s^2 - 12v_1^2\omega_{18}\omega_9^3\omega_6^2\omega_{13} + 18v_1^2\omega_{18}\omega_9^2\omega_6\omega_{22}\omega_{13}^2 +$
$18v_1^2\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13} + 12\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2 - 12v_1^2\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13}^2 - 36\omega_{18}\omega_9^3\omega_6\omega_{22}c_s^2 - 12v_1^2\omega_{18}\omega_9^2\omega_{22}\omega_{13}^2 + 36\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2c_s^2 +$
$12\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} + 18\omega_{18}\omega_9^3\omega_6^2\omega_{13}^2c_s^2 - 12v_1^2\omega_9^2\omega_6\omega_{22}\omega_{13}^2 - 18\omega_9^3\omega_6^2\omega_{13}^2c_s^2 - 36\omega_9^2\omega_6\omega_{22}\omega_{13}^2c_s^2 + 54\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13}c_s^2 - 12v_1^2\omega_{18}\omega_9^3\omega_6\omega_{22} +$
$6v_1^2\omega_{18}\omega_9^3\omega_6^2\omega_{13}^2 + 36\omega_{18}\omega_9^3\omega_6\omega_{13}c_s^2 + 12\omega_{18}\omega_9^2\omega_{22}\omega_{13}^2 + 54\omega_{18}\omega_9^2\omega_6\omega_{22}\omega_{13}^2c_s^2 - 18\omega_{18}\omega_9^2\omega_6\omega_{22}\omega_{13}^2 + 12\omega_9^2\omega_6\omega_{22}\omega_{13}^2 - 18\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13} +$
$12\omega_{18}\omega_9^3\omega_6\omega_{22} - 12v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2 - 6\omega_{18}\omega_9^3\omega_6^2\omega_{13}^2 - 36\omega_{18}\omega_9^2\omega_{22}\omega_{13}^2c_s^2$

$C_{17} = 12\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13} + 12\omega_{18}\omega_6^2\omega_{22}\omega_{13} + 18\omega_{18}\omega_9^2\omega_6\omega_{22}\omega_{13}c_s^2 + 12\omega_{18}\omega_9^2\omega_6^2c_s^2 - 12\omega_{18}\omega_9^2\omega_{22}\omega_{13}c_s^2 - 36v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{13} -$
$36v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2 - 36v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{13} + 12\omega_{18}\omega_9^2\omega_6^2\omega_{13} + 12\omega_{18}\omega_9\omega_6^3\omega_{22} - 12\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2 -$
$18v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13} + 18v_1^2\omega_{18}\omega_9^2\omega_6^3\omega_{13} + 18v_1^2\omega_9\omega_6^3\omega_{22}\omega_{13} + 6\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2 - 36v_1^2\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13} + 36v_1^2\omega_{18}\omega_9\omega_6^3 - 12\omega_{18}\omega_9^2\omega_6^2\omega_{13}c_s^2 +$
$36v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 12\omega_{18}\omega_9\omega_6^3\omega_{22}c_s^2 - 12\omega_{18}\omega_6^2\omega_{22} - 12\omega_{18}\omega_9^2\omega_6^3c_s^2 - 12\omega_{18}\omega_9\omega_6^3 + 12\omega_9^2\omega_6^2\omega_{13}c_s^2 - 6\omega_{18}\omega_9^2\omega_6^3\omega_{13} - 6\omega_9\omega_6^3\omega_{22}\omega_{13} -$
$12\omega_{18}\omega_9\omega_6^2\omega_{22} - 24\omega_{18}\omega_9^2\omega_6^2\omega_{22}c_s^2 - 6\omega_{18}\omega_9\omega_6^3\omega_{13}c_s^2 + 36v_1^2\omega_{18}\omega_9^2\omega_6\omega_{22} + 6\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13} + 72v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} - 72v_1^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} -$
$18v_1^2\omega_{18}\omega_9\omega_6^3\omega_{13} + 36v_1^2\omega_{18}\omega_9^2\omega_6^2 - 4\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}c_s^2 + 12\omega_{18}\omega_9\omega_6^3c_s^2 + 18v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13} - 12\omega_9\omega_6^2\omega_{22}\omega_{13}c_s^2 - 12\omega_{18}\omega_9^2\omega_6^2 -$
$36v_1^2\omega_{18}\omega_9^2\omega_6^3 + 36v_1^2\omega_9^2\omega_6^2\omega_{13} + 24\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}c_s^2 + 24\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 12\omega_{18}\omega_9^2\omega_6\omega_{22}c_s^2 + 6\omega_{18}\omega_9\omega_6^3\omega_{13} + 12\omega_{18}\omega_9^2\omega_6^3 - 12\omega_9^2\omega_6^2\omega_{13} -$
$6\omega_{18}\omega_6^3\omega_{22}\omega_{13} - 6\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}c_s^2 - 24\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} + 36v_1^2\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 12\omega_{18}\omega_9^2\omega_6^3\omega_{22}c_s^2 + 12\omega_9\omega_6^2\omega_{22}\omega_{13} - 6\omega_9^2\omega_6^3\omega_{13}c_s^2 +$
$6\omega_9^2\omega_6^3\omega_{13} + 6\omega_9\omega_6^3\omega_{22}\omega_{13}c_s^2 - 12\omega_{18}\omega_9^2\omega_6^3\omega_{22} + 6\omega_{18}\omega_9^2\omega_6^3\omega_{13}c_s^2 - 36v_1^2\omega_9\omega_6^2\omega_{22}\omega_{13} - \omega_{18}\omega_9^2\omega_6^3\omega_{22}\omega_{13}c_s^2 + 12\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2 - 18v_1^2\omega_9^2\omega_6^3\omega_{13}$

$C_{18} = \omega_5v_1v_2^2\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 + 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_8 -$
$\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + \omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 + 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14} -$
$2v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} - 2v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} + \omega_5v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} + 2\omega_5v_3^2v_1\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 -$
$2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 - 2v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14} - 2\omega_5v_3^2v_1\omega_{18}\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20} +$
$2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_8 + 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14} - 2v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 -$
$2\omega_5v_3^2v_1v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}\omega_8 - \omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 -$
$\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 - \omega_5v_3^2v_1^2v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{20}\omega_{14}\omega_8 -$
$v_1^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + \omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14} + 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - \omega_5v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} - \omega_5v_3^2v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 +$
$\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_8 +$
$2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - \omega_5v_3^2v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} + \omega_5v_1v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14} + \omega_5v_3^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} + 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 - 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14} - 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3^2v_1v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + \omega_5v_3^2v_1^2v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} - v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + 2v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} -$
$2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_8 - 2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} + \omega_5v_3^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$\omega_5v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1^2v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 -$
$2\omega_5v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_8 + \omega_5v_3^2v_1\omega_{18}\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}\omega_8 + 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} -$
$2\omega_5v_1v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + \omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 - \omega_5v_3^2v_1v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20} - 2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$\omega_5v_1v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} + 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20} +$
$2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8 - \omega_5v_3^2v_2\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 - \omega_5v_1^2v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 -$
$2\omega_5v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3^2v_1\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} + 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 -$
$v_3^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 - 2\omega_5v_1v_2^2\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} + 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 +$
$\omega_5v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_8 + 2\omega_5v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20} + 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 + \omega_5v_1^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$v_3^2v_1\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2\omega_{18}v_2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_5v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$\omega_5v_3^2v_1v_2^2\omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_8 + 2v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} + v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14} - v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 - \omega_5v_1^2v_2\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} - v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14} - \omega_5v_3^2v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 - v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_1^2\omega_{18}v_2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} - 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} - \omega_5v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_3^2v_1^2v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} + v_1\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2v_3^2v_1\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - \omega_5v_3^2\omega_{18}v_2\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 -$
$2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - \omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_1v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} + 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_8 + 2\omega_5v_3^2v_1^2v_2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}\omega_8 +$

$2v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_1\omega_{18}v_2^2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20} -$
$2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 + \omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} +$
$2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} -$
$\omega_5v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20} - v_3^2v_1^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + \omega_5v_3^2v_1v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 -$
$2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14} - \omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20} + \omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$\omega_5v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3^2v_1\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}\omega_8 +$
$2\omega_5v_3^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 - \omega_5v_3^2v_1\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} -$
$2v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} - 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20} -$
$2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14} + 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_3^2v_1^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 -$
$2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_5v_1^2v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 +$
$2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 - 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + 2\omega_5v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} - \omega_5v_3^2v_1\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_8 +$
$\omega_5v_3^2v_1\omega_{18}v_2^2\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20} + 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{20}\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14} - 2\omega_5v_3^2v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} +$
$\omega_5v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} -$
$\omega_5v_3^2v_1^2v_2\omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 - \omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 + 2\omega_5v_3^2v_2\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1v_2^2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_3^2v_1\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 - \omega_5v_3^2v_1\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + \omega_5v_3^2v_1\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + \omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14} + 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 + 2\omega_5v_1^2v_2\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + v_3^2v_1\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14} - 2\omega_5v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 +$
$2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} - 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14} + \omega_5v_3^2v_1\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + \omega_5v_3^2v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} -$
$2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3^2v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 -$
$2\omega_5v_1^2v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_1^2\omega_{18}v_2\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 -$
$2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} - 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} - \omega_5v_1\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_1^2v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + 2v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20} + 2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 + v_3^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_3^2v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14} + v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 - 2\omega_5v_1^2\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 -$
$\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - 2\omega_5v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_{14}\omega_8 + \omega_5v_3^2v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - v_3^2v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8$

$C_{19} = \omega_5v_3^2\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 + 4\omega_5v_3^2v_1v_2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_1v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 -$
$4\omega_5v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} + 2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} - 2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8 + \omega_5v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5v_3^2v_1\omega_{18}v_2\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 - 4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_8 + 2\omega_5v_1v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$4v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} - 2\omega_5v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + \omega_5v_3^2\omega_{18}v_2^2\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_{20}\omega_{14}\omega_8 +$
$4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_8 + 2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{20}\omega_{14}\omega_8 + 2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - \omega_5v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + 4\omega_5v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 +$
$2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{20}\omega_{14}\omega_8 - 4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14} - 2\omega_5\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + 2\omega_5\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} +$
$2\omega_5v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14} + 2\omega_5\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 +$
$\omega_5v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_8 + 4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14} -$
$2\omega_5v_3^2\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20} - 2\omega_5\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14} + 2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 + 4\omega_5v_1\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14} -$
$2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14} - 2\omega_5v_3^2\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3^2v_2^2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 -$
$2\omega_5v_1v_2\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 + 4\omega_5v_1\omega_{18}v_2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_8 + \omega_5v_3^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 +$
$4\omega_5v_3^2v_1\omega_{18}v_2\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_8 - 2v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} + 2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_{14}\omega_8 + 4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 -$
$\omega_5v_3^2\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2v_1v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 -$
$2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 - \omega_5v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 +$
$v_3^2\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20} + 4v_1\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 - 4v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 -$
$\omega_5v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 4\omega_5v_1\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} + 4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14} -$
$2\omega_5v_3^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 - v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + 4\omega_5v_3^2v_1\omega_{18}v_2\omega_{12}\omega_6\omega_{20}\omega_{14}\omega_8 -$
$4v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14} + 4\omega_5v_1\omega_{18}v_2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5v_3^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_{18}\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 - 2\omega_5\omega_{18}v_2^2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 -$
$\omega_5v_3^2\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_3^2\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5v_3^2v_1v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20} + 2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}\omega_8 + 2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20} - 4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}\omega_8 +$
$2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_8 - 2\omega_5v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} + \omega_5v_3^2v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 + 4v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14} -$
$4\omega_5v_3^2v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_8 + 4\omega_5v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 - 2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_8 + 2\omega_5v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} +$
$2\omega_5v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 - 2v_3^2\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 - 2\omega_5v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + \omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 -$
$2\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20} - 2\omega_5\omega_{18}v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 - \omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 +$
$4\omega_5v_1\omega_{18}v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} - 4\omega_5v_1\omega_{18}v_2\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3^2\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$\omega_5v_3^2\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 + \omega_5v_3^2\omega_{18}\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5v_3^2v_1\omega_{18}v_2\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8 + \omega_5v_2^2\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 -$
$4\omega_5v_1\omega_{18}v_2\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 + v_3^2\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_5\omega_{18}v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 +$

$2\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 - \omega_5\omega_{18} v_2^2\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_{22} c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5 v_3^2\omega_{18} v_2^2\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8 - 2v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 + 4\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_{20}\omega_{14}\omega_8 + \omega_5 v_3^2\omega_{18}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2v_3^2\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14} + 2\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20} + 4\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 +$
$4\omega_5 v_1\omega_{18} v_2\omega_{12}\omega_6\omega_{22} c_s^2\omega_{20}\omega_8 + 2v_3^2\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14} + 2\omega_5 v_3^2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{14} +$
$4v_3^2 v_1\omega_{18} v_2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 + 2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_{22} c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_{22} c_s^2\omega_{20}\omega_8 +$
$2\omega_5\omega_{18} v_2^2\omega_9\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 - 2v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20} - 2\omega_5\omega_{18} v_2^2\omega_{12}\omega_6\omega_{22} c_s^2\omega_{20}\omega_8 + 4\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20} +$
$\omega_5 v_3^2\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_2^2\omega_9\omega_{12}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_5 v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 - 4\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 -$
$2v_1\omega_{18} v_2\omega_9\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_3^2\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 - 2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 +$
$v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 + 2\omega_5\omega_{18} v_2^2\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 + 2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20} + 2\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14} -$
$2\omega_5 v_3^2\omega_{18} v_2^2\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_8 - 2\omega_5 v_3^2\omega_{18}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 - 4\omega_5 v_3^2 v_1 v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_3^2\omega_{18} v_2^2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_1\omega_{18} v_2\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 - 4\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20} +$
$2\omega_5 v_3^2\omega_{18} v_2^2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 - 4\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}\omega_8 - \omega_5 v_3^2\omega_{18} v_2^2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5 v_1\omega_{18} v_2\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_3^2 v_1\omega_{18} v_2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 +$
$2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 + 2\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 + 2\omega_5 v_3^2 v_1\omega_{18} v_2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + 4v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{14} -$
$2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14} - 4\omega_5 v_1 v_2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_5 v_3^2 v_2^2\omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 + 2v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 -$
$\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 - 4\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14} + 2\omega_5 v_3^2\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 +$
$4\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_{18} v_2^2\omega_9\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 + 2\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20} - 4\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 -$
$2\omega_5 v_3^2\omega_{18} v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14} - 2\omega_5 v_3^2\omega_{18} v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_3^2\omega_{18} v_2^2\omega_{12}\omega_6\omega_{20}\omega_{14}\omega_8 - \omega_5 v_3^2 v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5 v_3^2\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14} + 2\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 + 2\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 -$
$v_3^2\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22} c_s^2\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_3^2 v_1 v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}\omega_8 + 2v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14} -$
$4\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14} + 2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 + 2\omega_5 v_1\omega_{18} v_2\omega_9\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 -$
$4\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14} + 4\omega_5 v_1 v_2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 + 4v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20} + 2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$4v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 - 2\omega_5\omega_{18} v_2^2\omega_9\omega_{12} c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_3^2 v_1 v_2\omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 - \omega_5\omega_{18} v_2^2\omega_9\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 +$
$\omega_5\omega_{18} v_2^2\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_3^2\omega_{18}\omega_{12}\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_5\omega_{18} v_2^2\omega_{12}\omega_6\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5 v_3^2\omega_{18} v_2^2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 + v_3^2\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 + 4\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12} c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5\omega_{18} v_2^2\omega_{12}\omega_6\omega_{22} c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22} c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_3^2\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 - 2\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 -$
$4\omega_5 v_1\omega_{18} v_2\omega_{12}\omega_6\omega_{22} c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20} - 2\omega_5 v_1\omega_{18} v_2\omega_{12}\omega_6\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 - 4v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14} +$
$4\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_8 + 4\omega_5 v_1 v_2\omega_9\omega_{12}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_3^2 v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_1\omega_{18} v_2\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2v_3^2 v_1\omega_{18} v_2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 - \omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 + 4\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20} - 2\omega_5 v_3^2 v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}\omega_8 + 2\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_{22} c_s^2\omega_{20}\omega_{14}\omega_8$

$C_{20} = -6\omega_5^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 6\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14} -$
$12\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 24\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 -$
$12\omega_5^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 + 12\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22} c_s^4\omega_{20}\omega_{14}\omega_8 +$
$24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 - 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 - 6\omega_5^2 v_1^2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$6\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{14}\omega_8 + 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_8 + 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 - 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_{14}\omega_8 - \omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20} +$
$12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 + 24\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14} + 6\omega_5 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$6\omega_5 v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 + 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14} + 12\omega_5^2 v_1\omega_{18} v_2\omega_{12}\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$6\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 24\omega_5^2 v_1\omega_{18} v_2\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 - 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7 c_s^2\omega_{20}\omega_8 - 6\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 + 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14} -$
$24\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14} + 24\omega_5^2 v_1\omega_{18} v_2\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7 c_s^2\omega_{20}\omega_8 -$
$12\omega_5^2 v_3^2 v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 6\omega_5^2 v_3^2\omega_{18}\omega_{12}\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 6\omega_5^2 v_3^2 v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 -$
$12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14} - 12\omega_5^2 v_3^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14} +$
$12\omega_5^2 v_3^2 v_1^2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14} +$
$24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14} + 6\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$6\omega_5^2 v_3^2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 6\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 6\omega_5^2 v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^4\omega_{20}\omega_8 - 18\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13} c_s^4\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 + 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 +$
$12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7 c_s^2\omega_{20}\omega_8 - 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 - 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7\omega_{20}\omega_8 + 12\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 - 24\omega_5^2 v_1 v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 +$
$6\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 - 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20} - 24\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 +$
$12\omega_5 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14} - 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_8 - 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20} +$
$12\omega_5^2 v_3^2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5 v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 + 6\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20} + 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14} - 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7 c_s^4\omega_{20}\omega_8 -$
$12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20} + 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20} - 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{14} +$
$12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20} + 6\omega_5^2 v_3^2 v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_8 -$
$24\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14} + 12\omega_5 v_3^2 v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 - 6\omega_5 v_3^2 v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$6\omega_5 v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 6\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$12\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13} c_s^4\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 + 12\omega_5^2 v_1 v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 +$
$12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{14} + 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 + 12\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$24\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 - 6\omega_5 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 + 10\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13} c_s^4\omega_{20}\omega_{14}\omega_8 -$

$12\omega_5^2 v_3^2 v_1^2 \omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 + 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 - 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_8 +$
$12\omega_5 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20} + 12\omega_5^2 v_3^2\omega_{18}\omega_{12}\omega_6^3\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14} +$
$12\omega_5^2 v_1^2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{14}\omega_8 + 12\omega_5 v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 +$
$12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_8 + 12\omega_5\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 - 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 -$
$6\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14} + 12\omega_5^2 v_3^2 v_1 v_2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$24\omega_5^2 v_1\omega_{18} v_2\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_8 + 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 + 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14} +$
$12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20} + 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 - 12\omega_5^2 v_3^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_7\omega_{20}\omega_{14}\omega_8 + 12\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 - 24\omega_5^2 v_3^2 v_1 v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 -$
$12\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14} + 6\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 - 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14} + 12\omega_5^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 + 12\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13} c_s^4\omega_{20}\omega_{14}\omega_8 - 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14} +$
$6\omega_5^2 v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 + 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22} c_s^4\omega_{20}\omega_{14}\omega_8 -$
$24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20} + 6\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 - 6\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$24\omega_5^2 v_1 v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14} + 6\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{14}\omega_8 +$
$12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 + 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 +$
$24\omega_5^2 v_1\omega_{18} v_2\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 + 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20} -$
$24\omega_5 v_1\omega_{18} v_2\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 + 12\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_8 - 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14} -$
$6\omega_5 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 - 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_8 + 6\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 +$
$12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14} + 12\omega_5^2 v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 + 12\omega_5^2 v_3^2 v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 +$
$24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_8 + 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20} +$
$12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7\omega_{20}\omega_8 - 12\omega_5^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 - 6\omega_5^2 v_3^2 v_1^2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$24\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 + 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5^2 v_1 v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5^2 v_1 v_2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20} - 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 -$
$24\omega_5^2 v_1 v_2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 6\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_8 + 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14} - 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5 v_1\omega_{18} v_2\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14} - 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22} c_s^4\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_7\omega_{20}\omega_{14}\omega_8 + 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20} - 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 -$
$24\omega_5^2 v_1 v_2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 6\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 - 2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 - 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20} -$
$12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20} + 12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14} + 12\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_8 -$
$6\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 24\omega_5^2 v_3^2 v_1 v_2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 24\omega_5^2 v_3^2 v_1 v_2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 - 12\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_8 + 12\omega_5 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14} -$
$12\omega_5^2 v_1\omega_{18} v_2\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13} c_s^4\omega_{20}\omega_{14}\omega_8 - 6\omega_5^2 v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5^2 v_3^2 v_1 v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 + 12\omega_5^2 v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 - 12\omega_5 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$6\omega_5^2 v_3^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 + 12\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20}\omega_8 + 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20} +$
$24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_8 + 12\omega_5^2 v_1\omega_{18} v_2\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 - 12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7\omega_{20}\omega_{14}\omega_8 - 24\omega_5^2 v_3^2 v_1\omega_{18} v_2\omega_{12}\omega_6^3\omega_7\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 +$
$6\omega_5^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2 v_1^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_8 - 18\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13} c_s^4\omega_{20}\omega_{14}\omega_8 +$
$6\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 - 12\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{14}\omega_8 + 12\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13} c_s^4\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5^2 v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8 - 12\omega_5 v_3^2 v_1^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14} + 6\omega_5^2 v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20} + 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^4\omega_{20}\omega_8 + 12\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14} -$
$6\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5 v_3^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20} - 12\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5^2 v_3^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_8 - 6\omega_5^2 v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 - 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{20} +$
$12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4\omega_{14} - 24\omega_5^2 v_1\omega_{18} v_2\omega_{12}\omega_6^3\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^4\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5^2 v_3^2 v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8 - 24\omega_5^2 v_1\omega_{18} v_2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8$

$C_{21} = 2\omega_5 v_1^2\omega_{18} v_2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 - 2\omega_5\omega_{18} v_2\omega_9\omega_{12}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_5 v_1^2\omega_{18} v_2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5 v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 - 2\omega_5\omega_{18} v_2\omega_9\omega_{12}\omega_{22} c_s^2\omega_{20}\omega_{14}\omega_8 - 2 v_1\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20} - 2\omega_5 v_1^2\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14} +$
$2\omega_5 v_1\omega_{18} v_2^2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_{14}\omega_8 - 2\omega_5\omega_{18} v_2\omega_9\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_8 - 2\omega_5 v_1\omega_{18} v_2^2\omega_9\omega_{12}\omega_{20}\omega_{14}\omega_8 + \omega_5 v_1\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 -$
$2 v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{14} - 2\omega_5 v_1\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14} + 2\omega_5 v_1\omega_{18} v_2^2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 + \omega_5 v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5 v_2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 + 2\omega_5 v_1\omega_{18} v_2^2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14} - \omega_5 v_1\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 - 2 v_1^2\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14} -$
$v_1\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_1^2\omega_{18} v_2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14} + 2\omega_5 v_1\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{20}\omega_{14}\omega_8 - \omega_5 v_1\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2\omega_{18} v_2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13} c_s^2\omega_{20}\omega_{14} + 2\omega_5\omega_{18} v_2\omega_9\omega_{12} c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5\omega_{18} v_2\omega_9\omega_{12}\omega_{22}\omega_{13} c_s^2\omega_{14}\omega_8 - \omega_5 v_1\omega_{18} v_2^2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 +$

$\omega_5 v_1 \omega_{18} v_2^2 \omega_{12} \omega_6 \omega_{13} \omega_{20} \omega_{14} \omega_8 + 2\omega_5 v_2 \omega_9 \omega_{12} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 + \omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{13} \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1 v_2^2 \omega_9 \omega_{12} \omega_{13} \omega_{20} \omega_{14} \omega_8 +$
$2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{20} \omega_8 - 2v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_8 - 2\omega_5 v_1 \omega_{18} \omega_{12} \omega_6 \omega_{22} c_s^2 \omega_{20} \omega_8 + \omega_5 v_1 \omega_{18} v_2^2 \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 +$
$\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 - 2\omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 - \omega_5 v_1^2 v_2 \omega_9 \omega_{12} \omega_6 \omega_{13} \omega_{20} \omega_{14} \omega_8 -$
$2\omega_5 \omega_{18} v_2 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 - 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{20} - 2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} + \omega_5 v_1 \omega_9 \omega_{12} \omega_6 \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 +$
$2\omega_5 v_1^2 \omega_{18} v_2 \omega_{12} \omega_6 \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} c_s^2 \omega_{20} \omega_{14} \omega_8 - 2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 + v_1 \omega_{18} v_2^2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 +$
$2\omega_5 v_1^2 \omega_{18} v_2 \omega_{12} \omega_6 \omega_{22} \omega_{20} \omega_8 - 2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_8 - \omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 - \omega_5 v_1 \omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 +$
$2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} c_s^2 \omega_{20} \omega_8 - 2v_1 \omega_{18} v_2^2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_8 - 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} c_s^2 \omega_{20} \omega_{14} \omega_8 - 2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 c_s^2 \omega_{20} \omega_{14} \omega_8 +$
$2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{14} + 2\omega_{18} v_2 \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 - 2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} + \omega_5 v_1 v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{14} \omega_8 -$
$2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} + 2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1 \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{14} \omega_8 + 2\omega_5 \omega_{18} v_2 \omega_{12} \omega_6 \omega_{22} c_s^2 \omega_{20} \omega_8 -$
$\omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{14} \omega_8 - 2\omega_5 v_1^2 \omega_{18} v_2 \omega_{12} \omega_6 \omega_{22} \omega_{20} \omega_{14} \omega_8 + \omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 + 2v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{14} +$
$2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{20} \omega_8 - v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{14} \omega_8 + 2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} + 2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{20} +$
$2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{14} \omega_8 + 2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} - 2\omega_5 v_1^2 \omega_{18} v_2 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_8 -$
$2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{13} \omega_{20} \omega_{14} \omega_8 - \omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{14} \omega_8 - 2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_{22} \omega_{20} \omega_8 + 2\omega_5 v_1^2 v_2 \omega_9 \omega_{12} \omega_{13} \omega_{20} \omega_{14} \omega_8 -$
$2\omega_5 v_1^2 v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 - \omega_5 \omega_{18} v_2 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 - \omega_{18} v_2 \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 - 2\omega_5 \omega_{18} v_2 \omega_{12} \omega_6 \omega_{22} c_s^2 \omega_{20} \omega_8 -$
$\omega_5 \omega_{18} v_2 \omega_{12} \omega_6 \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 + 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1 \omega_9 \omega_{12} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 +$
$2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 + 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 + \omega_5 v_1 v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{13} \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_{22} c_s^2 \omega_{20} \omega_8 -$
$2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} c_s^2 \omega_{20} \omega_8 - \omega_5 v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{14} \omega_8 + 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 c_s^2 \omega_{20} \omega_{14} \omega_8 + 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_8 -$
$2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{14} + 2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_{13} \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{14} + 2\omega_5 v_1 \omega_{18} v_2^2 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_8 -$
$v_1^2 \omega_{18} v_2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 - 2v_1 \omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 + 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{20} + 2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} +$
$2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} + 2\omega_5 \omega_{18} v_2 \omega_{12} \omega_6 c_s^2 \omega_{20} \omega_{14} \omega_8 + v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{14} \omega_8 + 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{20} \omega_8 +$
$2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} + \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 - v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 -$
$\omega_5 v_2 \omega_9 \omega_{12} \omega_6 \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 - 2v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} + \omega_5 \omega_{18} v_2 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 + 2v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} -$
$\omega_5 v_1 v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 + 2\omega_5 v_1 \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 + 2v_1^2 \omega_{18} v_2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_8 + \omega_5 v_1 \omega_{18} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 -$
$2v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{14} - 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{20} \omega_8 + 2\omega_5 v_1 \omega_{18} v_2^2 \omega_{12} \omega_6 \omega_{22} \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1 \omega_{18} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 -$
$2\omega_5 v_1 \omega_{18} v_2^2 \omega_{12} \omega_6 \omega_{22} \omega_{20} \omega_8 + 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 + 2\omega_5 v_1 \omega_{18} \omega_{12} \omega_6 \omega_{22} c_s^2 \omega_{20} \omega_{14} \omega_8 -$
$2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{14} \omega_8 + v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 + 2v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 + \omega_5 v_1 \omega_{18} \omega_{12} \omega_6 \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 +$
$2\omega_5 v_1^2 v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{14} \omega_8 - 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{20} \omega_{14} \omega_8 + 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 + 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{14} \omega_8 +$
$2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_{22} c_s^2 \omega_{20} \omega_{14} \omega_8 + 2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} c_s^2 \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{20} \omega_{14} + \omega_5 \omega_{18} v_2 \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 +$
$2\omega_5 v_1 v_2^2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 - \omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 + 2\omega_5 v_1 \omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 - 2\omega_5 v_1 \omega_{18} v_2^2 \omega_{12} \omega_6 \omega_{20} \omega_{14} \omega_8 -$
$2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{20} \omega_{14} \omega_8 - \omega_5 v_1 \omega_{18} v_2^2 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 + 2\omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{14} +$
$2\omega_5 \omega_{18} v_2 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 - \omega_5 v_1^2 \omega_{18} v_2 \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 - \omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 +$
$\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{20} \omega_8 - 2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{14} + v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{14} \omega_8 -$
$\omega_5 v_1^2 \omega_{18} v_2 \omega_{12} \omega_6 \omega_{13} \omega_{20} \omega_{14} \omega_8 + \omega_5 v_1^2 v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 + \omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{14} \omega_8 - 2\omega_5 v_1 v_2^2 \omega_9 \omega_{12} \omega_{22} \omega_{13} \omega_{14} \omega_8 +$
$2v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} + 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{20} \omega_{14} \omega_8 + 2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} c_s^2 \omega_{20} \omega_8 + 2v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} -$
$\omega_5 v_1^2 v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{14} \omega_8 - 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{20} \omega_{14} \omega_8 + 2\omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{14} + 2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{14} \omega_8 +$
$2\omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_{22} \omega_{13} c_s^2 \omega_{14} + \omega_5 \omega_{18} v_2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{14} \omega_8 + v_1 \omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_{14} \omega_8 - 2\omega_5 v_1^2 \omega_{18} v_2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_8 -$
$2\omega_5 v_1 \omega_{18} v_2^2 \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_8 - 2\omega_5 v_1 \omega_{18} \omega_{12} \omega_6 c_s^2 \omega_{20} \omega_{14} \omega_8 - \omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_{14} \omega_8 + 2v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} \omega_{20} \omega_8 +$
$2\omega_5 v_1 \omega_{18} \omega_9 \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} + 2\omega_5 v_1 \omega_{18} \omega_{12} \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{20} \omega_8 - \omega_5 v_1 \omega_{18} v_2^2 \omega_9 \omega_{12} \omega_6 \omega_{13} \omega_{20} \omega_{14} \omega_8$

$C_{22} = -3\omega_5 v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} \omega_{17} \omega_8 - 12\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_7 c_s^2 \omega_{20} + 6v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} \omega_8 + 6\omega_5 v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} \omega_8 -$
$3\omega_5 v_3 v_1^2 \omega_{18} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 + 12\omega_5 v_1 v_2^2 \omega_{15} \omega_7 c_s^2 \omega_{17} \omega_8 - 4\omega_5 v_1 \omega_{18} \omega_{15} \omega_6 c_s^4 \omega_{20} \omega_{17} \omega_8 - 6\omega_5 v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{17} \omega_8 -$
$12v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_8 + 12\omega_5 v_3^2 v_1 v_2^2 \omega_{15} \omega_7 \omega_{17} \omega_8 - 12v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} + 12\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} +$
$6\omega_5 v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_7 \omega_{20} \omega_8 - 3\omega_5 v_3 v_1^2 v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} \omega_{17} \omega_8 - 12\omega_5 v_3 \omega_{18} v_2^2 \omega_{15} \omega_7 c_s^2 \omega_{20} + 12\omega_5 v_1 \omega_{18} v_2^2 \omega_{15} \omega_7 c_s^2 \omega_{17} -$
$6\omega_5 v_1 \omega_{18} v_2^2 \omega_6 \omega_7 c_s^2 \omega_{20} \omega_8 - 6\omega_5 v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_7 \omega_{20} \omega_{17} \omega_8 + 12\omega_5 v_3 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} - 6v_3 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 +$
$3\omega_5 v_3^2 v_1 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 + 6v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 - 12v_3 v_1^2 \omega_{18} v_2^2 \omega_6 \omega_7 \omega_{20} \omega_8 - 12\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_7 c_s^2 \omega_{17} \omega_8 -$
$12\omega_5 v_1 \omega_{18} v_2^2 \omega_{15} \omega_7 c_s^2 \omega_{20} \omega_{17} - 12\omega_5 v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{17} + 12v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} - 12\omega_5 v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_7 \omega_{17} -$
$12v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} \omega_{17} - 6v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} \omega_8 - 12v_3 v_1^2 \omega_{18} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_8 + 12\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} +$
$3\omega_5 v_1 \omega_{18} v_2^2 \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 + 6\omega_5 v_3 v_1^2 v_2^2 \omega_{15} \omega_7 \omega_{20} \omega_{17} \omega_8 - 12\omega_5 v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_7 \omega_{20} \omega_{17} + 6\omega_5 v_3 v_1^2 v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{17} \omega_8 +$
$12v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} - 12v_3 \omega_{18} v_2^2 \omega_6 \omega_7 c_s^2 \omega_{20} \omega_8 + 6v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 - 6\omega_5 v_3^2 v_1 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} \omega_8 + 6v_3 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} \omega_8 -$
$3\omega_5 v_3 \omega_{18} v_2^2 \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 + 6v_3 v_1^2 \omega_{18} v_2^2 \omega_6 \omega_7 \omega_{20} \omega_{17} \omega_8 + 12\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_7 c_s^2 \omega_{17} \omega_8 - 12\omega_5 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} +$
$6\omega_5 v_3 v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} \omega_8 + 12v_3^2 v_1 \omega_{18} v_2^2 \omega_6 \omega_7 \omega_{20} \omega_8 - 6\omega_5 v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_7 \omega_{20} \omega_8 - 12\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} +$
$12\omega_5 v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_7 \omega_{20} + 6\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_8 + 6v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{17} \omega_8 + 12v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} -$
$12v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} \omega_8 - 6\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} \omega_8 + 6v_3 v_1^2 \omega_{18} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 + 12\omega_5 v_3 \omega_{18} v_2^2 \omega_{15} \omega_7 c_s^2 \omega_{17} \omega_8 -$
$12\omega_5 v_3 v_1^2 \omega_{15} \omega_7 c_s^2 \omega_{17} \omega_8 + 6\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 - 6\omega_5 v_1 \omega_{18} v_2^2 \omega_{15} \omega_7 c_s^2 \omega_{20} \omega_8 - 3\omega_5 v_3 v_1^2 \omega_{18} v_2^2 \omega_6 \omega_7 \omega_{20} \omega_{17} \omega_8 +$
$6\omega_5 v_3 v_1^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} \omega_8 - 6\omega_5 v_3 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} \omega_8 - 12v_3 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} + 6v_3 \omega_{18} v_2^2 \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 -$
$6\omega_5 v_3^2 v_1 v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{17} \omega_8 - 6v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 - 6\omega_5 v_3^2 v_1 v_2^2 \omega_{15} \omega_7 \omega_{20} \omega_{17} \omega_8 + 12\omega_5 v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_7 \omega_{20} \omega_{17} +$
$12v_3^2 v_1 \omega_{18} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_8 + 3\omega_5 v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} \omega_{17} \omega_8 + 6\omega_5 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} \omega_8 + 12\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_7 c_s^2 \omega_{17} -$
$6\omega_5 v_1 v_2^2 \omega_{15} \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 - 6v_1 \omega_{18} v_2^2 \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 - 12v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} - 12v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} +$
$12\omega_5 v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} \omega_{17} \omega_8 + 12\omega_5 v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{17} - 6v_3^2 v_1 \omega_{18} v_2^2 \omega_6 \omega_7 \omega_{20} \omega_{17} \omega_8 - 6\omega_5 v_3^2 v_1 \omega_{15} \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 +$
$6\omega_5 v_3 v_1^2 \omega_{18} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_8 + 12\omega_5 v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_7 \omega_{17} + 12\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_7 c_s^2 \omega_{20} \omega_{17} - 12\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{17} +$
$12v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{17} + 12v_3 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_8 - 3\omega_5 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 - 12\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} +$
$12\omega_5 v_3 \omega_{18} v_2^2 \omega_{15} \omega_7 c_s^2 \omega_{20} \omega_{17} + 6\omega_5 v_3 \omega_{18} v_2^2 \omega_6 \omega_7 c_s^2 \omega_{20} \omega_8 - 12\omega_5 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} + 12v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} \omega_{17} -$
$12v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_8 - 12v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} - 3\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 + 12\omega_5 v_3 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_7 \omega_{20} -$
$12\omega_5 v_3 v_1^2 v_2^2 \omega_{15} \omega_7 \omega_{17} \omega_8 + 6\omega_5 v_3^2 v_1 \omega_{18} v_2^2 \omega_{15} \omega_7 \omega_{20} \omega_{17} \omega_8 - 6\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_7 c_s^2 \omega_{20} \omega_8 - 3\omega_5 v_3 v_1^2 \omega_{15} \omega_6 \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 +$

$3\omega_5 v_3\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5 v_3\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_{17} + 12\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_7c_s^2\omega_{20} + 12v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_8 +$
$6\omega_5 v_3^2v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_7\omega_{17}\omega_8 + 3\omega_5 v_3^2v_1v_2^2\omega_{15}\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 + 6\omega_5 v_3v_1^2\omega_{18}v_2^2\omega_6\omega_7\omega_{20}\omega_8 + 6v_3^2v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5 v_3v_1^2\omega_{18}v_2^2\omega_{15}\omega_7\omega_{17}\omega_8 + 12\omega_5 v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_{17} + 3\omega_5 v_3^2v_1\omega_{18}\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 12v_3\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{20} -$
$6\omega_5 v_3v_1^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_7\omega_{20}\omega_8 - 6v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_7c_s^2\omega_{17}\omega_8 + 12v_1\omega_{18}v_2^2\omega_6\omega_7c_s^2\omega_{20}\omega_8 - 12\omega_5 v_3v_1^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_7\omega_{20}\omega_{17} +$
$6\omega_5 v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_8 + 6\omega_5 v_1\omega_{18}v_2^2\omega_{15}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5 v_3\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{17} - 6\omega_5 v_1v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{17}\omega_8 +$
$12\omega_5 v_1\omega_{18}v_2^2\omega_{15}\omega_7c_s^2\omega_{20} - 12\omega_5 v_3v_2^2\omega_{15}\omega_7c_s^2\omega_{17}\omega_8 - 6v_3v_1^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 + 12v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_{17} -$
$12v_3v_1^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_7\omega_{17} - 6\omega_5 v_3\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_8 - 12\omega_5 v_3\omega_{18}v_2^2\omega_{15}\omega_7c_s^2\omega_{17} - 12\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_7c_s^2\omega_{20}\omega_{17} +$
$3\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5 v_1\omega_{18}v_2^2\omega_{15}\omega_7c_s^2\omega_{17}\omega_8 + 12\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_7c_s^2\omega_{17} - 6\omega_5 v_3\omega_{18}v_2^2\omega_{15}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 +$
$6\omega_5 v_3v_1^2\omega_{15}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 3\omega_5 v_3^2v_1\omega_{18}v_2^2\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 - 6\omega_5 v_3^2v_1\omega_{18}\omega_6\omega_7c_s^2\omega_{20}\omega_8 - 12\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_7c_s^2\omega_{17} +$
$2\omega_5 v_1\omega_{18}\omega_{15}\omega_6\omega_7c_s^4\omega_{20}\omega_{17}\omega_8 - 3\omega_5 v_3v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 6v_3^2v_1\omega_{18}\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 12v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_{17} +$
$6\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_7c_s^2\omega_{17}\omega_8 + 12v_3v_1^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_7\omega_{20}\omega_8 - 6\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5 v_3^2v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{17}\omega_8 +$
$6\omega_5 v_3\omega_{18}v_2^2\omega_{15}\omega_7c_s^2\omega_{20}\omega_8 - 6\omega_5 v_3^2v_1\omega_{18}v_2^2\omega_6\omega_7\omega_{20}\omega_8 - 6v_3^2v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_7\omega_{17}\omega_8 - 6\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_8 +$
$12v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{17} + 12v_3\omega_{18}v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_{17} + 3\omega_5 v_1v_2^2\omega_{15}\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5 v_3^2v_1\omega_{15}\omega_7c_s^2\omega_{17}\omega_8 +$
$6\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_7c_s^2\omega_{20}\omega_8 - 12\omega_5 v_3^2v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_7\omega_{20} - 12\omega_5 v_3v_1^2\omega_{18}v_2^2\omega_{15}\omega_7\omega_{20} + 6\omega_5 v_3v_2^2\omega_{15}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 12v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_7c_s^2\omega_{20}$

$C_{23} = 4\omega_5 v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8 - 4\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{17} + 4\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_8 - 2\omega_5^2v_3^2v_2^2\omega_{15}\omega_6\omega_{20}\omega_{17}\omega_8 - 4\omega_5^2\omega_{15}\omega_6c_s^4\omega_{17}\omega_8 +$
$2\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6c_s^2\omega_{20}\omega_8 + 4\omega_5 v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20} - 4\omega_5\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_8 - 4\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_{17}\omega_8 +$
$4\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4\omega_{17}\omega_8 - 2\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8 + 4\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_{17} - 4\omega_5 v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_{17}\omega_8 -$
$4\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5 v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20} + 4\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6^2\omega_{17}\omega_8 + \omega_5^2v_2^2\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20} -$
$4\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{17} - 4\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{17}\omega_8 + 2\omega_5\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5^2v_3v_1\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 +$
$8\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_{20}\omega_{17} - 8\omega_5v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20} + 4\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6c_s^2\omega_{17} - 2\omega_5^2\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20}\omega_8 + 4\omega_5\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{17} +$
$4\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_{20} - 2\omega_5^2v_2^2\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20} + 4\omega_5^2v_3v_1\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8 + 2\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8 -$
$2\omega_5^2v_3v_1\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8 + 4\omega_5^2\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{17} - 4\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{20} + 4\omega_5 v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{17}\omega_8 -$
$2\omega_5 v_3^2\omega_{18}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5^2v_2^2\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8 - 2\omega_5^2\omega_{18}\omega_6c_s^4\omega_{20}\omega_{17}\omega_8 + 4\omega_5^2v_3v_1\omega_{18}\omega_6^2c_s^2\omega_{20}\omega_8 -$
$8\omega_5 v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20} + 4\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17} + 4\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3^2\omega_{18}v_2^2\omega_6^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 +$
$4\omega_5^2v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{20}\omega_8 - 2\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_8 - 2\omega_5^2v_3^2\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8 - 2\omega_5^2\omega_{18}\omega_{15}c_s^4\omega_{20}\omega_{17}\omega_8 -$
$8\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_{20} + 4\omega_5 v_3v_1\omega_{18}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{17}\omega_8 - 2\omega_5^2v_3^2\omega_{18}v_2^2\omega_6^2\omega_{20}\omega_8 - 4\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{17} -$
$2\omega_5^2v_3^2\omega_{18}\omega_6^2c_s^2\omega_{20}\omega_8 + 2\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5 v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5^2\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20}\omega_{17} + 2\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{17}\omega_8 +$
$4\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_{20}\omega_8 - 2\omega_5 v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8 - 4\omega_5 v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5^2v_3^2\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8 -$
$8\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{17} + 2\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_8 + 2\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_{20}\omega_{17}\omega_8 + 4\omega_5\omega_{18}v_2^2\omega_6^2c_s^2\omega_{20}\omega_8 - 2\omega_5^2v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{20}\omega_{17}\omega_8 -$
$4\omega_5\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17} + 8\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{17} - 4\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17} + \omega_5^2\omega_{18}v_2^2\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 - 8\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20} +$
$8\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17} - 2\omega_5^2v_3v_1\omega_{18}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20}\omega_{17}\omega_8 - 2\omega_5^2v_3^2v_2^2\omega_{15}\omega_6^2\omega_{17}\omega_8 + 2\omega_5^2\omega_{18}\omega_6^2c_s^4\omega_{20}\omega_8 -$
$\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5\omega_{18}\omega_{15}c_s^4\omega_{20}\omega_{17}\omega_8 + 8\omega_5 v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_8 - 4\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20} - 8\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_{17} -$
$2\omega_5^2\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{17}\omega_8 - 2\omega_5\omega_{15}\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8 + 4\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20}\omega_{17} - 4\omega_5 v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_{17} + 4\omega_5 v_3^2\omega_{18}v_2^2\omega_6^2\omega_{20}\omega_8 -$
$4\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_8 + 2\omega_5^2\omega_{15}\omega_6^2c_s^4\omega_{17}\omega_8 + \omega_5^2v_3^2v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5 v_3^2\omega_{18}\omega_6^2c_s^2\omega_{20}\omega_8 + 2\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_8 +$
$4\omega_5^2v_2^2\omega_{15}\omega_6c_s^2\omega_{17}\omega_8 - 8\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{17} + \omega_5^2v_3^2\omega_{18}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17} + 4\omega_5\omega_{15}\omega_6c_s^4\omega_{20}\omega_{17}\omega_8 -$
$8\omega_5 v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{20}\omega_8 + \omega_5^2v_3^2\omega_{18}v_2^2\omega_6^2\omega_{20}\omega_{17}\omega_8 - 8\omega_5 v_3v_1\omega_{18}\omega_6^2c_s^2\omega_{20}\omega_8 + 8\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20} - 4\omega_5 v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17} +$
$2\omega_5 v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_8 + 2\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5^2v_3^2v_2^2\omega_{15}\omega_6\omega_{17}\omega_8 -$
$4\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6c_s^2\omega_{17}\omega_8 + 8\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{17}\omega_8 + 8\omega_5 v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_8 + 8\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20} - 2\omega_5^2\omega_{18}v_2^2\omega_6^2c_s^2\omega_{20}\omega_8 +$
$2\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20}\omega_8 - 2\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_{20}\omega_8 - 2\omega_5\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8 - 8\omega_5^2v_3v_1\omega_{15}\omega_6c_s^2\omega_{17}\omega_8 - 4\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_{20}\omega_{17} -$
$4\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20} + 2\omega_5 v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5^2v_3^2\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20}\omega_{17} + 2\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{17}\omega_8 +$
$8\omega_5 v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17} + 4\omega_5 v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{17} + 4\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6c_s^2\omega_{17} - 4\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_{20}\omega_{17}\omega_8 -$
$8\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_{17} + 4\omega_5^2v_3^2\omega_{15}\omega_6c_s^2\omega_{17}\omega_8 + 4\omega_5 v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{17} - 4\omega_5 v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_8 + 8\omega_5^2v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6\omega_{17}\omega_8 -$
$4\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20} + 2\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8 + 4\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6\omega_{20}\omega_{17}\omega_8 - 2\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_8 - 8\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6\omega_{17}\omega_8 +$
$4\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17} - 8\omega_5 v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{17} - 4\omega_5\omega_{18}\omega_6^2c_s^4\omega_{20}\omega_8 - 8\omega_5^2v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17} - 4\omega_5 v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_8 -$
$\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20}\omega_8 + 4\omega_5^2\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20} - 12\omega_5\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20}\omega_{17}\omega_8 - 2\omega_5\omega_{18}v_2^2\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 -$
$4\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{17} + 2\omega_5^2v_3^2\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8 + 4\omega_5\omega_{18}\omega_6c_s^4\omega_{20}\omega_{17}\omega_8 + \omega_5^2v_3^2\omega_{15}\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5^2\omega_{18}v_2^2\omega_{15}\omega_6c_s^2\omega_{20} -$
$8\omega_5 v_3v_1\omega_{18}\omega_{15}\omega_6^2c_s^2\omega_{17} + 8\omega_5 v_3v_1\omega_{18}v_2^2\omega_{15}\omega_6^2\omega_{20}\omega_{17} - 4\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4\omega_{17} + 4\omega_5^2v_3^2\omega_{18}v_2^2\omega_{15}\omega_6\omega_{17} + 4\omega_5\omega_{18}v_2^2\omega_{15}\omega_6^2c_s^2\omega_{20}$

$C_{24} = -2\omega_5 v_3^2v_1\omega_{15}\omega_6\omega_{17}\omega_8 + 4v_3^2v_1\omega_{18}\omega_6\omega_{20}\omega_8 + \omega_5 v_1\omega_{18}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5 v_3\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_{20} -$
$4\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_{17} - 4\omega_5 v_3\omega_{18}\omega_{15}c_s^2\omega_{20} - 2\omega_5 v_1\omega_{15}c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_{20}\omega_{17} - 2v_3^2v_1\omega_{18}\omega_6\omega_{20}\omega_{17}\omega_8 +$
$2v_3\omega_{18}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_{17}\omega_8 - 2v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{17}\omega_8 + 2v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_{20}\omega_{17}\omega_8 + 4v_3\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17} +$
$2v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3\omega_{18}\omega_{15}\omega_6c_s^2\omega_{17}\omega_8 + 4\omega_5 v_1\omega_{15}c_s^2\omega_{17}\omega_8 - 2\omega_5 v_1\omega_{18}\omega_{15}c_s^2\omega_{20}\omega_8 + 4v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_{20}\omega_8 +$
$4\omega_5 v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17} - 4v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_{17} - 2\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_{20}\omega_8 + 4\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_{20}\omega_{17} + 2\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_{20}\omega_8 -$
$4\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_{20}\omega_{17} + 2\omega_5 v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_8 + 4v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_{20}\omega_{17} - 4\omega_5 v_1\omega_{18}\omega_{15}c_s^2\omega_{20}\omega_{17} - 4\omega_5 v_3\omega_{15}c_s^2\omega_{17}\omega_8 -$
$4v_3\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20} + 4v_3\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_8 + 2\omega_5 v_3v_1^2\omega_{15}\omega_6\omega_{17}\omega_8 - 4\omega_5 v_3v_1^2\omega_{15}\omega_{17}\omega_8 - 4\omega_5 v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20} - 2\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_{17}\omega_8 -$
$4\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_{20} + \omega_5 v_1\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 - 4v_3v_1^2\omega_{18}\omega_6\omega_{20}\omega_8 + 4\omega_5 v_3\omega_{18}\omega_{15}\omega_6c_s^2\omega_{17} - \omega_5 v_3v_1^2\omega_{18}\omega_6\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3\omega_{18}\omega_6c_s^2\omega_{20}\omega_8 + 4\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_{20} + \omega_5 v_3^2v_1\omega_{15}\omega_6\omega_{20}\omega_{17}\omega_8 + 4\omega_5 v_1\omega_{18}\omega_{15}c_s^2\omega_{20} + 2\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_{20}\omega_8 + 4v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{17} +$
$4v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_{17} + 4v_1\omega_{18}\omega_6c_s^2\omega_{20}\omega_8 + 4\omega_5 v_3\omega_{18}\omega_{15}c_s^2\omega_{17}\omega_8 + 2\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_1\omega_{18}\omega_{15}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3\omega_{15}\omega_6c_s^2\omega_{17}\omega_8 - 4\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_{17} - 2\omega_5 v_1\omega_{18}\omega_6c_s^2\omega_{20}\omega_8 - 2\omega_5 v_3\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_8 -$
$2\omega_5 v_3^2v_1\omega_{15}\omega_{20}\omega_{17}\omega_8 - \omega_5 v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5 v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{17} - \omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_{20}\omega_{17}\omega_8 - 4\omega_5 v_3^2v_1\omega_{18}\omega_{15}\omega_{17}\omega_8 -$
$4v_3\omega_{18}\omega_6c_s^2\omega_{20}\omega_8 - 4v_3\omega_{18}\omega_{15}\omega_6c_s^2\omega_{17} + 2v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_{17}\omega_8 - 4\omega_5 v_1\omega_{18}\omega_{15}c_s^2\omega_{17}\omega_8 - 4\omega_5 v_3v_1^2\omega_{18}\omega_{15}\omega_6\omega_{20}\omega_{17} - 4v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_8 -$
$4v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_{20}\omega_8 - \omega_5 v_3\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_1\omega_{15}\omega_6c_s^2\omega_{17}\omega_8 - 2v_3\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5 v_3\omega_{18}\omega_{15}c_s^2\omega_{20}\omega_{17} +$
$4v_3^2v_1\omega_{18}\omega_{15}\omega_6\omega_{20} + 4v_1\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20} + 2\omega_5 v_3v_1^2\omega_{18}\omega_6\omega_{20}\omega_8 + 2v_3v_1^2\omega_{18}\omega_6\omega_{20}\omega_{17}\omega_8 + 4\omega_5 v_3\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20} + 4\omega_5 v_1\omega_{18}\omega_{15}c_s^2\omega_{17} -$

$2\omega_5 v_3 \omega_{18} \omega_{15} c_s^2 \omega_{20} \omega_{17} \omega_8 + 4\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_{17} - \omega_5 v_3 v_1^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} \omega_8 - \omega_5 v_3 \omega_{18} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 - 4\omega_5 v_3 \omega_{18} \omega_{15} c_s^2 \omega_{17} +$
$\omega_5 v_3^2 v_1 \omega_{18} \omega_6 \omega_{20} \omega_{17} \omega_8 - 4\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_{20} + \omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_{20} \omega_{17} \omega_8 + 2\omega_5 v_3 v_1^2 \omega_{15} \omega_{20} \omega_{17} \omega_8 + 4\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_{17} -$
$2\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_{20} \omega_{17} \omega_8 + 2\omega_5 v_3 \omega_{18} \omega_{15} c_s^2 \omega_{20} \omega_8 + 4\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_{17} \omega_8 - 2v_1 \omega_{18} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 + 2v_3 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 -$
$2\omega_5 v_3^2 v_1 \omega_{18} \omega_6 \omega_{20} \omega_8 - 4v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_{20} - 4v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_{20} \omega_{17} - 4v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} - 2\omega_5 v_3 v_1^2 \omega_{18} \omega_{15} \omega_6 \omega_{20} \omega_8 +$
$2\omega_5 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 + 4\omega_5 v_3^2 v_1 \omega_{15} \omega_{17} \omega_8 + 2\omega_5 v_3 \omega_{15} c_s^2 \omega_{20} \omega_{17} \omega_8 + 2\omega_5 v_3^2 v_1 \omega_{18} \omega_{15} \omega_6 \omega_{17} \omega_8 - 4\omega_5 v_3 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17}$

$C_{25} = -4\omega_{18} v_2^2 \omega_6 c_s^2 \omega_{20} \omega_8 - 4\omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{17} - 8\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{17} - 4\omega_5 \omega_{18} v_2^2 \omega_{15} c_s^2 \omega_{17} + 2\omega_{18} v_2^2 \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 -$
$4\omega_5 v_1^2 \omega_{15} c_s^2 \omega_{17} \omega_8 + 4v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 + 8v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} - 4v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{17} + 4\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} -$
$4v_1^2 \omega_{18} \omega_6 c_s^2 \omega_{20} \omega_8 - 8\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_{17} \omega_8 + 4\omega_5 v_3 v_1 \omega_{18} \omega_{15} c_s^2 \omega_{20} \omega_{17} \omega_8 + \omega_5 v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 + 2v_1^2 \omega_{18} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 +$
$4\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_{20} \omega_{17} + 2\omega_5 v_1^2 v_2^2 \omega_{15} \omega_{20} \omega_{17} \omega_8 + 4\omega_5 v_1^2 \omega_{18} \omega_{15} c_s^2 \omega_{20} \omega_{17} + 4v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} + 8\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_{20} -$
$2\omega_5 \omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 - 4\omega_5 v_3 v_1 \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 + \omega_5 \omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 + 4\omega_5 \omega_{18} v_2^2 \omega_{15} c_s^2 \omega_{20} \omega_{17} + 4\omega_5 v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_8 +$
$8\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} + 4\omega_5 \omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{20} - 4\omega_5 v_3 v_1 \omega_{18} \omega_6 c_s^2 \omega_{20} \omega_8 - 4v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 + 2\omega_5 v_3 v_1 \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 -$
$8\omega_5 v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{17} + 4\omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} - 2\omega_5 v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 + 4v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_8 - 8\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_8 +$
$8v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} + 4\omega_5 v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} - 4v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{17} + 8\omega_5 v_3 v_1 \omega_{18} \omega_{15} c_s^2 \omega_{20} - 4\omega_5 v_1^2 v_2^2 \omega_{15} \omega_{17} \omega_8 - 4\omega_5 v_2^2 \omega_{15} c_s^2 \omega_{17} \omega_8 +$
$4v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} + 4\omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_8 - 4\omega_5 v_3 v_1 v_2^2 \omega_{15} \omega_6 \omega_{17} \omega_8 + 4\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_8 - 4\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_{20} +$
$8\omega_5 v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} + 2\omega_5 \omega_{18} v_2^2 \omega_{15} c_s^2 \omega_{20} \omega_8 - 4\omega_5 v_1^2 \omega_{18} \omega_{15} c_s^2 \omega_{20} - 4v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{17} \omega_8 - 2\omega_5 v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 +$
$8\omega_5 v_3 v_1 v_2^2 \omega_{15} \omega_{17} \omega_8 - \omega_5 v_1^2 v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} \omega_8 + 4v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_8 - 2\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{17} \omega_8 + 2\omega_5 v_1^2 \omega_{18} \omega_{15} c_s^2 \omega_{20} \omega_8 -$
$4v_1^2 \omega_{18} v_2^2 \omega_6 \omega_{20} \omega_8 - \omega_5 v_1^2 \omega_{18} v_2^2 \omega_6 \omega_{20} \omega_{17} \omega_8 + 2\omega_5 v_3 v_1 \omega_{18} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 + 8\omega_5 v_3 v_1 \omega_{15} c_s^2 \omega_{17} \omega_8 - 4\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6 \omega_{20} \omega_8 +$
$2\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_{20} \omega_8 + 2\omega_5 v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 - 4v_3 v_1 \omega_{18} v_2^2 \omega_6 \omega_{20} \omega_{17} \omega_8 + 2\omega_5 v_1^2 \omega_{15} c_s^2 \omega_{20} \omega_{17} \omega_8 + 4\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_{20} \omega_{17} \omega_8 -$
$2v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} \omega_8 - 8v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_8 - 2\omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 - 4\omega_5 v_3 v_1 \omega_{18} \omega_{15} c_s^2 \omega_{20} \omega_8 - 2\omega_5 v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_8 -$
$4\omega_5 v_1^2 \omega_{18} \omega_{15} c_s^2 \omega_{17} + 2v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{17} \omega_8 - 2\omega_5 \omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_8 - 4\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} - 4\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_{17} -$
$\omega_5 v_1^2 \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 - 2\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} \omega_8 + 4\omega_5 v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 + 2\omega_5 v_1^2 v_2^2 \omega_{15} \omega_6 \omega_{17} \omega_8 - 8v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} -$
$4\omega_5 v_3 v_1 \omega_{15} c_s^2 \omega_{20} \omega_{17} \omega_8 - 2\omega_5 \omega_{18} v_2^2 \omega_{15} c_s^2 \omega_{20} \omega_{17} \omega_8 - \omega_5 v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 - 2\omega_5 v_1^2 \omega_{18} \omega_{15} c_s^2 \omega_{20} \omega_{17} \omega_8 + 8v_3 v_1 \omega_{18} v_2^2 \omega_6 \omega_{20} \omega_8 +$
$2\omega_5 v_1^2 \omega_{18} v_2^2 \omega_6 \omega_{20} \omega_8 + 2v_1^2 \omega_{18} v_2^2 \omega_6 \omega_{20} \omega_{17} \omega_8 - 4\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_{20} \omega_8 - 2v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 + 2\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6 \omega_{20} \omega_{17} \omega_8 -$
$\omega_5 v_1^2 \omega_{18} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 - 8\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_{20} \omega_{17} - 4\omega_5 v_3 v_1 v_2^2 \omega_{15} \omega_{20} \omega_{17} \omega_8 + 4v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} \omega_8 - 4v_3 v_1 \omega_{18} \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 +$
$8v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{17} - 4\omega_5 \omega_{18} v_2^2 \omega_{15} c_s^2 \omega_{20} + \omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} \omega_8 - 4v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} + 4\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{17} -$
$4\omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{20} - 2\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_{20} \omega_{17} \omega_8 - 8\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} - \omega_5 \omega_{18} v_2^2 \omega_6 c_s^2 \omega_{20} \omega_{17} \omega_8 + 4\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_{17} \omega_8 +$
$2\omega_5 v_2^2 \omega_{15} c_s^2 \omega_{20} \omega_{17} \omega_8 + 8v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{17} - 8v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_8 + 8v_3 v_1 \omega_{18} \omega_6 c_s^2 \omega_{20} \omega_8 + 4\omega_5 \omega_{18} v_2^2 \omega_{15} c_s^2 \omega_{17} \omega_8 +$
$2\omega_5 v_1^2 \omega_{18} \omega_6 c_s^2 \omega_{20} \omega_8 + 8\omega_5 v_3 v_1 \omega_{18} \omega_{15} c_s^2 \omega_{17} + 4\omega_5 v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{17} - 4v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} + 4\omega_5 \omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{17} +$
$4\omega_5 v_1^2 \omega_{18} \omega_{15} c_s^2 \omega_{17} \omega_8 + 2\omega_5 \omega_{18} v_2^2 \omega_6 c_s^2 \omega_{20} \omega_8 - 8\omega_5 v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} + 2v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 - 2\omega_5 v_1^2 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_8 -$
$4\omega_5 \omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} + 2\omega_{18} v_2^2 \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 - 4\omega_5 v_1^2 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17} - 8\omega_5 v_3 v_1 \omega_{18} \omega_{15} c_s^2 \omega_{20} \omega_{17} + 2\omega_5 v_3 v_1 v_2^2 \omega_{15} \omega_6 \omega_{20} \omega_{17} \omega_8 +$
$2\omega_5 v_1^2 \omega_{15} \omega_6 c_s^2 \omega_{17} \omega_8 + 4\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_6 \omega_{17} \omega_8 + 8\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_{15} \omega_{17} - 8v_3 v_1 \omega_{18} \omega_{15} \omega_6 c_s^2 \omega_{20} \omega_{17}$

$C_{26} = -36\omega_{18}^2 \omega_9 \omega_6 \omega_{22} c_s^2 + 3\omega_{18} \omega_9 \omega_6^2 \omega_{22} \omega_{13} \omega_{11} - 12v_3^2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{11} - 12\omega_{18}^2 \omega_9 \omega_6 \omega_{11} + 3\omega_{18}^2 \omega_9 \omega_6^2 \omega_{22} \omega_{13} c_s^2 \omega_{11} + 12\omega_{18}^2 \omega_9 \omega_6 \omega_{22} -$
$12\omega_{18}^2 \omega_9 \omega_{22} \omega_{13} \omega_{11} + 12v_3^2 \omega_{18} \omega_9 \omega_6 \omega_{13} \omega_{11} + 18\omega_{18}^2 \omega_6^2 \omega_{22} \omega_{13} c_s^2 - 18\omega_{18} \omega_9 \omega_6^2 \omega_{13} c_s^2 \omega_{11} + 12\omega_{18} \omega_9 \omega_{22} \omega_{13} \omega_{11} - 12v_3^2 \omega_{18}^2 \omega_9 \omega_6 \omega_{13} \omega_{11} -$
$36\omega_{18}^2 \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{11} + v_3^2 \omega_{18}^2 \omega_9 \omega_6^2 \omega_{22} \omega_{13} \omega_{11} + 6\omega_{18}^2 \omega_6^2 \omega_{13} \omega_{11} - 36\omega_{18}^2 \omega_9 \omega_6^2 c_s^2 \omega_{11} - 6\omega_9 \omega_6^2 \omega_{22} \omega_{13} \omega_{11} - 18\omega_{18}^2 \omega_9 \omega_6 \omega_{22} \omega_{13} +$
$36\omega_{18}^2 \omega_6^2 c_s^2 \omega_{11} + 18\omega_{18}^2 \omega_9 \omega_6^2 \omega_{13} c_s^2 \omega_{11} - 6\omega_{18}^2 \omega_9 \omega_6^2 \omega_{13} \omega_{11} + 12v_3^2 \omega_{18}^2 \omega_9 \omega_6 \omega_{11} - 12v_3^2 \omega_{18}^2 \omega_9 \omega_6 \omega_{22} - 3v_3^2 \omega_{18} \omega_9 \omega_6^2 \omega_{22} \omega_{13} \omega_{11} +$
$54\omega_{18}^2 \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 - 5v_3^2 \omega_{18}^2 \omega_9 \omega_6^2 \omega_{22} \omega_{13} - \omega_{18}^2 \omega_9 \omega_6^2 \omega_{22} \omega_{13} \omega_{11} + 6\omega_{18} \omega_9 \omega_6^2 \omega_{13} \omega_{11} - 6v_3^2 \omega_{18}^2 \omega_6^2 \omega_{13} \omega_{11} + 12\omega_{18}^2 \omega_9 \omega_6 \omega_{13} \omega_{11} -$
$12v_3^2 \omega_{18} \omega_9 \omega_{22} \omega_{13} \omega_{11} - 12v_3^2 \omega_{18}^2 \omega_9 \omega_{22} \omega_{13} - 36\omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{11} + 18v_3^2 \omega_{18}^2 \omega_9 \omega_6 \omega_{22} \omega_{13} - 18\omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{11} + 6v_3^2 \omega_9 \omega_6^2 \omega_{22} \omega_{13} \omega_{11} -$
$6\omega_{18}^2 \omega_6^2 \omega_{22} \omega_{13} - 36\omega_{18} \omega_9 \omega_{22} \omega_{13} c_s^2 \omega_{11} - 18\omega_{18}^2 \omega_6^2 \omega_{13} c_s^2 \omega_{11} - 12v_3^2 \omega_{18}^2 \omega_9 \omega_6^2 \omega_{11} - 36\omega_{18}^2 \omega_6^2 \omega_{22} c_s^2 + 18\omega_9 \omega_6^2 \omega_{22} \omega_{13} c_s^2 \omega_{11} + 12\omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{11} +$
$12v_3^2 \omega_{18}^2 \omega_9 \omega_6^2 \omega_{22} - 12v_3^2 \omega_{18}^2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{11} - 36\omega_{18}^2 \omega_9 \omega_{22} \omega_{13} c_s^2 - 12\omega_{18} \omega_9 \omega_6 \omega_{13} \omega_{11} + 12v_3^2 \omega_{18}^2 \omega_9 \omega_{22} \omega_{13} \omega_{11} + 36\omega_{18} \omega_9 \omega_6 \omega_{13} c_s^2 \omega_{11} +$
$12\omega_{18}^2 \omega_9 \omega_{22} \omega_{13} - 15\omega_{18}^2 \omega_9 \omega_6^2 \omega_{22} \omega_{13} c_s^2 - 12\omega_{18}^2 \omega_6^2 \omega_{11} + 6v_3^2 \omega_{18}^2 \omega_6^2 \omega_{22} \omega_{13} + 12\omega_{18}^2 \omega_6^2 \omega_{22} + 36\omega_{18}^2 \omega_9 \omega_6^2 \omega_{22} c_s^2 - 9\omega_{18} \omega_9 \omega_6^2 \omega_{22} \omega_{13} c_s^2 \omega_{11} -$
$6v_3^2 \omega_{18} \omega_9 \omega_6^2 \omega_{13} \omega_{11} + 18v_3^2 \omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{11} - 36\omega_{18}^2 \omega_9 \omega_6 \omega_{13} c_s^2 \omega_{11} - 12v_3^2 \omega_{18}^2 \omega_6^2 \omega_{22} + 54\omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{11} + 36\omega_{18}^2 \omega_9 \omega_6 c_s^2 \omega_{11} +$
$6v_3^2 \omega_{18}^2 \omega_9 \omega_6^2 \omega_{13} \omega_{11} + 12v_3^2 \omega_{18}^2 \omega_6^2 \omega_{11} + 12\omega_{18}^2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{11} + 12\omega_{18}^2 \omega_9 \omega_6^2 \omega_{11} + 5\omega_{18}^2 \omega_9 \omega_6^2 \omega_{22} \omega_{13} + 36\omega_{18}^2 \omega_9 \omega_{22} \omega_{13} c_s^2 \omega_{11} - 12\omega_{18}^2 \omega_9 \omega_6^2 \omega_{22}$

$C_{27} = 6\omega_{18} \omega_6^3 \omega_{13} \omega_{11} + 12\omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} - \omega_{18} \omega_9 \omega_6^3 \omega_{22} \omega_{13} c_s^2 \omega_{11} + \omega_{18} \omega_9 \omega_6^2 \omega_{22} \omega_{13} \omega_{11} + 36v_3^2 \omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{11} + 12\omega_{18} \omega_9 \omega_6^2 c_s^2 \omega_{11} +$
$12\omega_9 \omega_6^2 \omega_{13} c_s^2 \omega_{11} - 12\omega_{18} \omega_9 \omega_6^2 \omega_{13} c_s^2 \omega_{11} + 12\omega_{18} \omega_9 \omega_6^3 \omega_{11} + 18\omega_9 \omega_6^2 \omega_{22} \omega_{13} \omega_{11} - 36v_3^2 \omega_{18} \omega_9 \omega_6^2 \omega_{22} + 36v_3^2 \omega_9 \omega_6^2 \omega_{13} \omega_{11} + 36v_3^2 \omega_{18} \omega_9 \omega_6^2 \omega_{11} -$
$12\omega_{18} \omega_9 \omega_6^3 \omega_{22} - 12\omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 + 6\omega_{18} \omega_6^3 \omega_{22} \omega_{13} c_s^2 + 12\omega_{18} \omega_9 \omega_6^3 \omega_{22} c_s^2 + 6\omega_{18} \omega_9 \omega_6^3 \omega_{13} c_s^2 \omega_{11} - 3v_3^2 \omega_{18} \omega_9 \omega_6^2 \omega_{22} \omega_{13} \omega_{11} -$
$12\omega_{18} \omega_6^3 \omega_{11} - 18v_3^2 \omega_{18} \omega_6^3 \omega_{13} \omega_{11} - 6\omega_9 \omega_6^3 \omega_{22} \omega_{13} \omega_{11} + 12\omega_{18} \omega_6^3 \omega_{22} - 36v_3^2 \omega_{18} \omega_9 \omega_6^3 \omega_{11} + 18v_3^2 \omega_{18} \omega_9 \omega_6^3 \omega_{13} \omega_{11} + 12\omega_{18} \omega_9 \omega_6^2 \omega_{22} +$
$54v_3^2 \omega_{18} \omega_9 \omega_6^2 \omega_{22} \omega_{13} - 12\omega_9 \omega_6^2 \omega_{13} \omega_{11} - 12\omega_{18} \omega_9 \omega_6^2 \omega_{11} + 36v_3^2 \omega_{18} \omega_9 \omega_6^3 \omega_{22} + 12\omega_{18} \omega_6^3 c_s^2 \omega_{11} - 6\omega_9 \omega_6^3 \omega_{13} c_s^2 \omega_{11} + 12\omega_{18} \omega_9 \omega_6^2 \omega_{13} \omega_{11} -$
$36v_3^2 \omega_{18} \omega_6^3 \omega_{22} + 6\omega_9 \omega_6^3 \omega_{22} \omega_{13} c_s^2 \omega_{11} + 36v_3^2 \omega_{18} \omega_6^3 \omega_{11} + 5\omega_{18} \omega_9 \omega_6^3 \omega_{22} \omega_{13} - 18v_3^2 \omega_9 \omega_6^3 \omega_{13} \omega_{11} - 12\omega_{18} \omega_6^3 \omega_{22} c_s^2 + 12\omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{11} -$
$54v_3^2 \omega_9 \omega_6^2 \omega_{22} \omega_{13} \omega_{11} - 12\omega_{18} \omega_9 \omega_{22} \omega_{13} c_s^2 \omega_{11} - 18\omega_9 \omega_6^2 \omega_{22} \omega_{13} c_s^2 \omega_{11} + 18\omega_{18} \omega_9 \omega_6^2 \omega_{22} \omega_{13} c_s^2 - 36v_3^2 \omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} - 12\omega_{18} \omega_9 \omega_6^3 c_s^2 \omega_{11} -$
$12\omega_9 \omega_6 \omega_{22} \omega_{13} \omega_{11} - 6\omega_{18} \omega_6^3 \omega_{22} \omega_{13} - 6\omega_{18} \omega_9 \omega_6^3 \omega_{13} \omega_{11} - 6\omega_{18} \omega_6^3 \omega_{13} c_s^2 \omega_{11} - 5\omega_{18} \omega_9 \omega_6^3 \omega_{22} \omega_{13} c_s^2 - 18\omega_{18} \omega_9 \omega_6^2 \omega_{22} \omega_{13} -$
$5\omega_{18} \omega_9 \omega_6^2 \omega_{22} \omega_{13} c_s^2 \omega_{11} - 36v_3^2 \omega_{18} \omega_9 \omega_6^2 \omega_{13} \omega_{11} + 6\omega_9 \omega_6^3 \omega_{13} \omega_{11} - 15v_3^2 \omega_{18} \omega_9 \omega_6^3 \omega_{22} \omega_{13} + 18\omega_{18} \omega_9 \omega_6 \omega_{22} \omega_{13} c_s^2 \omega_{11} + 18v_3^2 \omega_{18} \omega_6^3 \omega_{22} \omega_{13} +$
$18v_3^2 \omega_9 \omega_6^3 \omega_{22} \omega_{13} \omega_{11} - 12\omega_{18} \omega_9 \omega_6^2 \omega_{22} c_s^2$

$C_{28} = -72v_3^4 \omega_6^2 + 24\omega_{18}^2 c_s^4 - 3v_3^2 \omega_{18}^2 \omega_6^3 + 6v_3^2 \omega_{18}^2 \omega_6^3 c_s^2 + 108v_3^2 \omega_6^3 c_s^2 + 6\omega_{18} \omega_6^3 c_s^4 + 36v_3^4 \omega_6^3 + \omega_{18}^2 \omega_6^3 c_s^2 + 12v_3^2 \omega_{18}^2 \omega_6^2 - 12v_3^2 \omega_{18}^2 \omega_6^2 c_s^2 - 24\omega_{18} \omega_6 c_s^2 +$
$3v_3^4 \omega_{18}^2 \omega_6^3 - 48\omega_{18}^2 \omega_6 c_s^4 - 8\omega_{18}^2 \omega_6^2 c_s^2 + 72v_3^2 \omega_{18} \omega_6 c_s^2 - 24\omega_{18} \omega_6^2 c_s^4 - 216v_3^2 \omega_6^2 c_s^2 - 12v_3^4 \omega_{18}^2 \omega_6^2 + 144v_3^2 \omega_{18} \omega_6^2 c_s^2 + 12\omega_{18}^2 \omega_6 c_s^2 - 36v_3^2 \omega_6^3 + 24\omega_{18} \omega_6 c_s^4 +$
$72v_3^4 \omega_{18} \omega_6^2 + 72v_3^2 \omega_6^2 + 24\omega_{18} \omega_6^2 c_s^2 - 36v_3^2 \omega_{18}^2 \omega_6 c_s^2 - 30v_3^4 \omega_{18} \omega_6^3 + 24\omega_{18}^2 \omega_6^2 c_s^4 - 72v_3^2 \omega_{18} \omega_6^3 c_s^2 - 72v_3^2 \omega_{18} \omega_6^2 - 3\omega_{18}^2 \omega_6^3 c_s^4 + 30v_3^2 \omega_{18} \omega_6^3 - 6\omega_{18} \omega_6^3 c_s^2$

2.4.4 Conservation of momentum: ρv_2

$$
\begin{aligned}
&v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{v_1\delta_l v_2}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\delta_l v_2\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_1} + (v_2^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2\delta_l v_2\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3\delta_l v_2}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_3} + \\
&\frac{\delta_l v_2\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_5)\frac{\delta_l^2c_s^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{\delta_l^2c_s^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} + \\
&(-2+\omega_{10}-2\omega_{10}c_s^2-3v_2^2\omega_{10}+6v_2^2+4c_s^2)\frac{\delta_l^2}{\delta_t\omega_{10}}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + (2-\omega_{10})\frac{3\delta_l^2v_2\rho}{\delta_t\omega_{10}}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-2+\omega_7)\frac{\delta_l^2c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} + \\
&(-2+\omega_7)\frac{\delta_l^2c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_5)\frac{\delta_l^2c_s^2\rho}{2\omega_5\delta_t}\frac{\partial^2v_2}{\partial x_1^2} + (-2+\omega_5)\frac{\delta_l^2c_s^2\rho}{2\omega_5\delta_t}\frac{\partial^2v_1}{\partial x_1\partial x_2} + \\
&(-2+\omega_{10}-3\omega_{10}c_s^2-v_2^2\omega_{10}+2v_2^2+6c_s^2)\frac{\delta_l^2v_2}{2\delta_t\omega_{10}}\frac{\partial^2\rho}{\partial x_2^2} + (-2+\omega_{10}-\omega_{10}c_s^2-3v_2^2\omega_{10}+6v_2^2+2c_s^2)\frac{\delta_l^2\rho}{2\delta_t\omega_{10}}\frac{\partial^2v_2}{\partial x_2^2} + \\
&(-2+\omega_7)\frac{\delta_l^2c_s^2\rho}{2\delta_t\omega_7}\frac{\partial^2v_3}{\partial x_2\partial x_3} + (-2+\omega_7)\frac{\delta_l^2c_s^2\rho}{2\delta_t\omega_7}\frac{\partial^2v_2}{\partial x_3^2} + (-1+v_1^2+3c_s^2)\frac{v_1\delta_l^3v_2}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+3v_1^2+c_s^2)\frac{\delta_l^3v_2\rho}{12\delta_t}\frac{\partial^3v_1}{\partial x_1^3} + \\
&C_1\frac{v_1\delta_l^3\rho}{6\omega_5\omega_{12}\delta_t}\frac{\partial^3v_2}{\partial x_1^3} + (-12+12\omega_5-\omega_5^2)\frac{\delta_l^3c_s^4}{6\omega_5^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} - \frac{\delta_l^3v_2c_s^2\rho}{6\delta_t}\frac{\partial^3v_2}{\partial x_1^2\partial x_2} + C_2\frac{\delta_l^3v_2\rho}{12\omega_5\omega_{15}\delta_t\omega_{10}^2}\frac{\partial^3v_1}{\partial x_1\partial x_2^2} + C_3\frac{\delta_l^3}{12\delta_t\omega_{10}^2}\frac{\partial^3\rho}{\partial x_2^3} + \\
&(-24+5\omega_{10}^2c_s^2+24\omega_{10}-36\omega_{10}c_s^2-60v_2^2\omega_{10}+60v_2^2+36c_s^2-4\omega_{10}^2+11v_2^2\omega_{10}^2)\frac{\delta_l^3v_2\rho}{6\delta_t\omega_{10}^2}\frac{\partial^3v_2}{\partial x_2^3} - \frac{\delta_l^3v_2c_s^2\rho}{6\delta_t}\frac{\partial^3v_3}{\partial x_1^2\partial x_3} + \\
&C_4\frac{\delta_l^3v_2\rho}{12\delta_t\omega_{16}\omega_{10}^2\omega_7}\frac{\partial^3v_3}{\partial x_2^2\partial x_3} - \frac{\delta_l^3v_2c_s^2\rho}{6\delta_t}\frac{\partial^3v_1}{\partial x_1\partial x_3^2} + (-12+12\omega_7-\omega_7^2)\frac{\delta_l^3c_s^4}{6\delta_t\omega_7^2}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} - \frac{\delta_l^3v_2c_s^2\rho}{6\delta_t}\frac{\partial^3v_2}{\partial x_2\partial x_3^2} + \\
&(-1+3c_s^2+v_3^2)\frac{v_3\delta_l^3v_2}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_5\frac{v_3\delta_l^3\rho}{6\omega_{19}\delta_t\omega_7}\frac{\partial^3v_2}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{\delta_l^3v_2\rho}{12\delta_t}\frac{\partial^3v_3}{\partial x_3^3} + \\
&(-3v_1^4\omega_9-12v_1^2\omega_9c_s^2+\omega_9c_s^2+6v_1^4+2c_s^4-6v_1^2-\omega_9c_s^4-2c_s^2+3v_1^2\omega_9+24v_1^2c_s^2)\frac{\delta_l^4v_2}{24\omega_9\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + \\
&(-4+2\omega_9-3\omega_9c_s^2+10v_1^2+6c_s^2-5v_1^2\omega_9)\frac{v_1\delta_l^4v_2\rho}{12\omega_9\delta_t}\frac{\partial^4v_1}{\partial x_1^4} + C_6\frac{\delta_l^4\rho}{24\omega_5^3\omega_{12}^2\delta_t}\frac{\partial^4v_2}{\partial x_1^4} + C_7\frac{v_1\delta_l^4c_s^2}{12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + \\
&C_8\frac{\delta_l^4c_s^2\rho}{12\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}\delta_t\omega_{10}}\frac{\partial^4v_1}{\partial x_1^3\partial x_2} + \\
&(3\omega_9-\omega_{12}-9\omega_9c_s^2+v_1^2\omega_{12}+3\omega_9\omega_{12}c_s^2+3\omega_{12}c_s^2-3v_1^2\omega_9+v_1^2\omega_9\omega_{12}-\omega_9\omega_{12})\frac{v_1\delta_l^4v_2\rho}{12\omega_9\omega_{12}\delta_t}\frac{\partial^4v_2}{\partial x_1^3\partial x_2} + \\
&C_9\frac{\delta_l^4v_2c_s^2}{12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\delta_t\omega_{10}^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{10}\frac{\delta_l^4c_s^2\rho}{12\omega_5^3\omega_{21}\omega_{15}\omega_{12}\delta_t\omega_{10}^2}\frac{\partial^4v_2}{\partial x_1^2\partial x_2^2} + C_{11}\frac{\delta_l^4\rho}{12\omega_5^3\omega_{15}^2\delta_t\omega_{10}^3}\frac{\partial^4v_1}{\partial x_1\partial x_2^3} + C_{12}\frac{\delta_l^4v_2}{12\delta_t\omega_{10}^3}\frac{\partial^4\rho}{\partial x_2^4} + \\
&C_{13}\frac{\delta_l^4\rho}{12\delta_t\omega_{10}^3}\frac{\partial^4v_2}{\partial x_2^4} + (3\omega_9-9\omega_9c_s^2+v_1^2\omega_9\omega_{13}-\omega_9\omega_{13}-\omega_{13}-3v_1^2\omega_9+3\omega_9\omega_{13}c_s^2+3\omega_{13}c_s^2+v_1^2\omega_{13})\frac{v_1\delta_l^4v_2\rho}{12\omega_9\delta_t\omega_{13}}\frac{\partial^4v_3}{\partial x_1^3\partial x_3} \\
&+ C_{14}\frac{\delta_l^4c_s^4\rho}{12\omega_5^3\omega_{15}\omega_{12}\omega_6\delta_t\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8}\frac{\partial^4v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{15}\frac{\delta_l^4\rho}{12\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3}\frac{\partial^4v_3}{\partial x_2^3\partial x_3} + C_{16}\frac{\delta_l^4}{12\omega_5\omega_{12}\omega_6\omega_{19}\delta_t\omega_7\omega_{20}\omega_{14}\omega_8}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} \\
&+ C_{17}\frac{\delta_l^4\rho}{4\omega_5\omega_{12}\omega_{19}\delta_t\omega_7\omega_{20}\omega_{14}\omega_8}\frac{\partial^4v_1}{\partial x_1^2\partial x_3^2} + C_{18}\frac{\delta_l^4\rho}{4\omega_5^2\omega_{12}\omega_{19}\delta_t\omega_7^2\omega_{20}\omega_{14}\omega_8}\frac{\partial^4v_2}{\partial x_1^2\partial x_3^2} + C_{19}\frac{v_3\delta_l^4\rho}{2\omega_5\omega_{12}\omega_{19}\delta_t\omega_7\omega_{20}\omega_{14}\omega_8}\frac{\partial^4v_3}{\partial x_1^2\partial x_3^2} + \\
&C_{20}\frac{\delta_l^4}{2\omega_5\omega_{15}\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C_{21}\frac{\delta_l^4\rho}{12\omega_5^2\omega_{15}\omega_6\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8}\frac{\partial^4v_1}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{22}\frac{\delta_l^4v_2\rho}{\omega_5\omega_{15}\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8}\frac{\partial^4v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{23}\frac{\delta_l^4\rho}{2\omega_5\omega_{15}\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8}\frac{\partial^4v_3}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{24}\frac{\delta_l^4v_2c_s^2}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{25}\frac{\delta_l^4c_s^2\rho}{12\omega_{19}\delta_t\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}}\frac{\partial^4v_2}{\partial x_2^2\partial x_3^2} + \\
&(v_3^2\omega_{18}-\omega_{18}-9c_s^2\omega_{11}+3\omega_{18}c_s^2+v_3^2\omega_{18}\omega_{11}-\omega_{18}\omega_{11}+3\omega_{11}+3\omega_{18}c_s^2\omega_{11}-3v_3^2\omega_{11})\frac{v_3\delta_l^4v_2\rho}{12\omega_{18}\delta_t\omega_{11}}\frac{\partial^4v_1}{\partial x_1\partial x_3^3} + \\
&C_{26}\frac{v_3\delta_l^4c_s^2}{12\omega_{19}^2\delta_t\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + \\
&(-9c_s^2\omega_{11}+3\omega_{19}c_s^2\omega_{11}-\omega_{19}+3\omega_{19}c_s^2+v_3^2\omega_{19}+v_3^2\omega_{19}\omega_{11}-\omega_{19}\omega_{11}+3\omega_{11}-3v_3^2\omega_{11})\frac{v_3\delta_l^4v_2\rho}{12\omega_{19}\delta_t\omega_{11}}\frac{\partial^4v_2}{\partial x_2\partial x_3^3} + \\
&C_{27}\frac{\delta_l^4c_s^2\rho}{12\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}}\frac{\partial^4v_3}{\partial x_2\partial x_3^3} + \\
&(6v_3^4+c_s^2\omega_{11}-12v_3^2c_s^2\omega_{11}+24v_3^2c_s^2-3v_3^4\omega_{11}+2c_s^4-c_s^4\omega_{11}-2c_s^2-6v_3^2+3v_3^2\omega_{11})\frac{\delta_l^4v_2}{24\delta_t\omega_{11}}\frac{\partial^4\rho}{\partial x_3^4} + C_{28}\frac{\delta_l^4\rho}{24\omega_{19}^2\delta_t\omega_7^3}\frac{\partial^4v_2}{\partial x_3^4} \\
&+ (-4-3c_s^2\omega_{11}+6c_s^2+10v_3^2+2\omega_{11}-5v_3^2\omega_{11})\frac{v_3\delta_l^4v_2\rho}{12\delta_t\omega_{11}}\frac{\partial^4v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$C_1 = 6-3\omega_5+\omega_5\omega_{12}-3\omega_{12}+3v_1^2\omega_{12}-3\omega_5\omega_{12}c_s^2-\omega_5v_1^2\omega_{12}-6v_1^2+3\omega_5v_1^2+9\omega_{12}c_s^2-18c_s^2+9\omega_5c_s^2$$

$$C_2 = -3\omega_5v_2^2\omega_{15}\omega_{10}^2-6\omega_{15}\omega_{10}^2+18\omega_{15}\omega_{10}^2c_s^2+12\omega_5v_2^2\omega_{10}^2+12\omega_5v_2^2\omega_{15}-12\omega_5v_2^2\omega_{10}-36\omega_5\omega_{10}c_s^2-6\omega_5v_2^2\omega_{15}\omega_{10}-18\omega_5\omega_{15}\omega_{10}c_s^2-36\omega_{10}^2c_s^2-11\omega_5\omega_{15}\omega_{10}^2c_s^2+6v_2^2\omega_{15}\omega_{10}^2+36\omega_5\omega_{15}c_s^2+6\omega_5\omega_{15}\omega_{10}+12\omega_5\omega_{10}+36\omega_5\omega_{10}^2c_s^2-12\omega_5\omega_{10}^2-12\omega_5\omega_{15}+12\omega_{10}^2+3\omega_5\omega_{15}\omega_{10}^2-12v_2^2\omega_{10}^2$$

$$C_3 = -144v_2^2\omega_{10}c_s^2-36v_2^4\omega_{10}-12\omega_{10}c_s^4+7v_2^4\omega_{10}^2-\omega_{10}^2c_s^2+36v_2^4+12c_s^4+12\omega_{10}c_s^2+144v_2^2c_s^2+36v_2^2\omega_{10}-36v_2^2+\omega_{10}^2c_s^4-12c_s^2+24v_2^2\omega_{10}^2c_s^2-7v_2^2\omega_{10}^2$$

$C_4 = 12v_2^2\omega_{16}\omega_7 + 36\omega_{16}\omega_7c_s^2 - 12v_2^2\omega_{10}\omega_7 - 11\omega_{16}\omega_{10}^2\omega_7c_s^2 - 6v_2^2\omega_{16}\omega_{10}\omega_7 + 6v_2^2\omega_{16}\omega_{10}^2 - 12\omega_{10}^2\omega_7 - 36\omega_{10}\omega_7c_s^2 + 6\omega_{16}\omega_{10}\omega_7 - 36\omega_{10}^2c_s^2 + 3\omega_{16}\omega_{10}^2\omega_7 - 12\omega_{16}\omega_7 + 36\omega_{10}^2\omega_7c_s^2 + 18\omega_{16}\omega_{10}^2c_s^2 + 12\omega_{10}\omega_7 - 3v_2^2\omega_{16}\omega_{10}^2\omega_7 - 6\omega_{16}\omega_{10}^2 + 12v_2^2\omega_{10}^2\omega_7 + 12\omega_{10}^2 - 12v_2^2\omega_{10}^2 - 18\omega_{16}\omega_{10}\omega_7c_s^2$

$C_5 = 6 - v_3^2\omega_{19}\omega_7 + \omega_{19}\omega_7 - 3\omega_{19} + 3v_3^2\omega_7 + 9\omega_{19}c_s^2 - 3\omega_{19}\omega_7c_s^2 - 3\omega_7 + 3v_3^2\omega_{19} - 18c_s^2 + 9\omega_7c_s^2 - 6v_3^2$

$C_6 =$
$-6\omega_5^3\omega_{12}c_s^2 + 6\omega_5^3v_1^2\omega_{12}^2c_s^2 - 3\omega_5^3\omega_{12}^2c_s^4 + 3\omega_5^3v_1^4\omega_{12}^2 - 36\omega_5^3v_1^2 + 72\omega_5v_1^2\omega_{12}c_s^2 + 12\omega_5^2v_1^2\omega_{12}^2 - 8\omega_5^2\omega_{12}^2c_s^2 - 72\omega_5^2v_1^2\omega_{12} - 12\omega_5^2v_1^2\omega_{12}^2c_s^2 - 30\omega_5^3v_1^4\omega_{12} - 48\omega_5\omega_{12}^2c_s^4 + 108\omega_5^3v_1^2c_s^2 - 24\omega_5\omega_{12}c_s^2 + 72\omega_5^2v_1^2 - 24\omega_5^2\omega_{12}c_s^4 - 3\omega_5^3v_1^2\omega_{12}^2 + 12\omega_5\omega_{12}^2c_s^2 + 24\omega_5^2\omega_{12}^2c_s^4 + 24\omega_{12}^2c_s^4 - 12\omega_5^2v_1^4\omega_{12}^2 + 24\omega_5^2\omega_{12}c_s^2 - 72\omega_5^2v_1^4 + 144\omega_5^2v_1^2\omega_{12}c_s^2 + 24\omega_5\omega_{12}c_s^4 + 6\omega_5^3\omega_{12}c_s^4 - 72\omega_5^3v_1^2\omega_{12}c_s^2 - 36\omega_5v_1^2\omega_{12}^2c_s^2 - 216\omega_5^2v_1^2c_s^2 + 72\omega_5^2v_1^4\omega_{12} + \omega_5^3\omega_{12}^2c_s^2 + 30\omega_5^3v_1^2\omega_{12} + 36\omega_5^3v_1^4$

$C_7 = -12\omega_5\omega_{21}v_1^2\omega_{12}^2\omega_{10} + 12\omega_5v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10} + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10} - 36\omega_5\omega_{15}\omega_9\omega_{12}^2\omega_{10}c_s^2 - 6\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 12\omega_5^2\omega_{21}v_1^2\omega_{12}^2\omega_{10} - \omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10} + 12\omega_5v_1^2\omega_9\omega_{12}^2\omega_{10} - 36\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 6\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10} + 18\omega_5\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10} + 18\omega_5^2\omega_{15}\omega_9\omega_{12}^2\omega_{10}c_s^2 + 6\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10} + 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2c_s^2 + 12\omega_{21}\omega_{15}\omega_{12}^2\omega_{10} - 12\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10} + 12\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}^2\omega_{10} + 5\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2\omega_{10} + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10} + 12\omega_5^2\omega_9\omega_{12}^2\omega_{10} + 12\omega_5^2\omega_{21}\omega_{12}^2 - 12\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10} - 36\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}c_s^2 - 6\omega_5^2v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 9\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 36\omega_5^2\omega_9\omega_{12}^2c_s^2 - 18\omega_5\omega_{21}\omega_{15}\omega_{12}^2\omega_{10} + 12\omega_5\omega_{21}\omega_{12}^2\omega_{10} - 12\omega_5^2v_1^2\omega_9\omega_{12}^2\omega_{10} + \omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}^2\omega_{10} - 12\omega_5^2\omega_{21}v_1^2\omega_{12}^2 + 36\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}c_s^2 + 12\omega_5\omega_{15}\omega_9\omega_{12}^2\omega_{10} + 6\omega_5^2v_1^2\omega_{15}\omega_9\omega_{12}^2\omega_{10} - 15\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}c_s^2 + 18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10}c_s^2 - 3\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 18\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 36\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}c_s^2 + 18\omega_5\omega_{21}v_1^2\omega_{15}\omega_{12}^2\omega_{10} + 3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}c_s^2 + 12\omega_5^2v_1^2\omega_9\omega_{12}^2 + 54\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_{21}v_1^2\omega_{15}\omega_9\omega_{10} - 12\omega_5^2\omega_9\omega_{12}^2 + 3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} - 6\omega_5^2\omega_{15}\omega_9\omega_{12}^2\omega_{10} - 12\omega_5\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}^2\omega_{10} - 12\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 18\omega_5^2\omega_{15}\omega_9\omega_{12}^2c_s^2 + 12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} + 6\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 5\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_{12}^2\omega_{10} + 36\omega_5\omega_9\omega_{12}^2\omega_{10}c_s^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} + 6\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{10} - 12\omega_{21}v_1^2\omega_{15}\omega_{12}^2\omega_{10} - 6\omega_5^2v_1^2\omega_{15}\omega_9\omega_{12}^2 + 36\omega_5^2\omega_{21}\omega_{12}^2\omega_{10}c_s^2 + 54\omega_5\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}c_s^2 - 36\omega_5\omega_{21}\omega_{12}^2\omega_{10}c_s^2 - 12\omega_5v_1^2\omega_{15}\omega_9\omega_{12}^2\omega_{10} - 36\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10}c_s^2 - 12\omega_5^2\omega_{21}\omega_{12}^2\omega_{10} - 36\omega_5^2\omega_9\omega_{12}^2\omega_{10}c_s^2 + 36\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_9\omega_{12}^2\omega_{10} - 36\omega_5^2\omega_{21}\omega_{12}^2c_s^2 + 6\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_{12}^2$

$C_8 = -\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 36\omega_5^3\omega_{21}v_1^2\omega_{12}\omega_{10} - 12\omega_5^2\omega_{21}\omega_{12}\omega_{10}c_s^2 + 12\omega_5^2\omega_{21}\omega_{12}\omega_{10} + 54\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_{12}\omega_{10} + 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{10}c_s^2 - 12\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_5^2\omega_{15}\omega_9\omega_{10} + 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 36\omega_5^2v_1^2\omega_{15}\omega_9\omega_{10} + 12\omega_5^2\omega_9\omega_{12}\omega_{10}c_s^2 + 6\omega_5^3\omega_{15}\omega_9\omega_{10} + 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 - 36\omega_5^3v_1^2\omega_9\omega_{12}\omega_{10} - 36\omega_5\omega_{21}v_1^2\omega_{15}\omega_{12}\omega_{10} - 12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10} + 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10} + 18\omega_5^3\omega_{21}v_1^2\omega_{15}\omega_{12} - 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10} + 5\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10} + 12\omega_5^2\omega_{15}\omega_9\omega_{10}c_s^2 - 12\omega_5^3\omega_9\omega_{12} + 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}c_s^2 - 36\omega_5^2v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 5\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 18\omega_5^3v_1^2\omega_{15}\omega_9\omega_{12} - 12\omega_5^3\omega_{21}\omega_{12}c_s^2 + 18\omega_5^3\omega_{21}v_1^2\omega_{15}\omega_9\omega_{10} - 12\omega_5^3\omega_{21}\omega_{12}\omega_{10} - 12\omega_5^2\omega_9\omega_{12}\omega_{10} - 6\omega_5^3\omega_{15}\omega_9\omega_{12}c_s^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{10} + 12\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10} - 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10} - 18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10}c_s^2 - 15\omega_5^3\omega_{21}v_1^2\omega_{15}\omega_{12}\omega_{10} - 3\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 36\omega_5^3\omega_{21}v_1^2\omega_{12} + 36\omega_5^2v_1^2\omega_9\omega_{12}\omega_{10} + 12\omega_5^3\omega_{21}\omega_{12} + 18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 36\omega_5\omega_{21}v_1^2\omega_{15}\omega_9\omega_{10} + \omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} - 6\omega_5^3\omega_{15}\omega_9\omega_{10}c_s^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10} + 36\omega_5^3v_1^2\omega_9\omega_{12} + 12\omega_5^3\omega_{21}\omega_{12}\omega_{10}c_s^2 - 54\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{10} + 6\omega_5^3\omega_{15}\omega_9\omega_{12} + 18\omega_5^3v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 36\omega_5^2\omega_{21}v_1^2\omega_{12}\omega_{10} + 12\omega_5^3\omega_9\omega_{12}c_s^2 - 18\omega_5^3v_1^2\omega_{15}\omega_9\omega_{10} - 12\omega_5^3\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5^3\omega_9\omega_{12}\omega_{10} + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10}c_s^2 - 5\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2$

$C_9 = -40\omega_5\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3c_s^2 - 12\omega_5\omega_{15}\omega_{12}\omega_{10}^3 - 12\omega_5^2\omega_{21}v_2^2\omega_{15}\omega_{12}\omega_{10} + 2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2 - 36\omega_5^2\omega_{15}\omega_{12}\omega_{10}^3c_s^2 + 12\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2 + 12\omega_5^2\omega_{21}v_2^2\omega_{12}\omega_{10}^3 + 36\omega_5\omega_{15}^2\omega_{10}^3c_s^2 + 6\omega_5^2\omega_{21}v_2^2\omega_{15}^2\omega_{10}^2 - 12\omega_5\omega_{15}^2\omega_{10}^3 + 12\omega_5\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3 - 12\omega_5\omega_{21}v_2^2\omega_{12}\omega_{10}^3 - 12\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3 - 12\omega_5\omega_{21}v_2^2\omega_{15}^2\omega_{10}^2 - \omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3 - 36\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2c_s^2 - 18\omega_5\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2 + 36\omega_5\omega_{15}\omega_{12}\omega_{10}^3c_s^2 + 18\omega_5\omega_{21}v_2^2\omega_{15}\omega_{12}\omega_{10}^3 - 12\omega_5^2\omega_{21}v_2^2\omega_{12}\omega_{10}^2 - 6\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2c_s^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 - 6\omega_5^2v_2^2\omega_{15}^2\omega_{10}^3 - 6\omega_5^2v_2^2\omega_{15}^2\omega_{12}\omega_{10}^2 - 12\omega_{21}v_2^2\omega_{15}\omega_{12}\omega_{10}^3 - 6\omega_5^2\omega_{21}\omega_{15}^2\omega_{10}^2 - 12\omega_5^2\omega_{21}\omega_{12}\omega_{10}^3 - 6\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}^3 - 6\omega_5^2\omega_{21}v_2^2\omega_{15}\omega_{12}\omega_{10}^3 + 54\omega_5\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2c_s^2 + 36\omega_5^2\omega_{15}\omega_{12}\omega_{10}^2c_s^2 - 12\omega_5v_2^2\omega_{15}^2\omega_{12}\omega_{10}^3 + 12\omega_5^2\omega_{21}\omega_{12}\omega_{10}^2 + 5\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3c_s^2 + 6\omega_5^2v_2^2\omega_{15}^2\omega_{12}\omega_{10}^3 + 36\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3c_s^2 + 18\omega_5^2\omega_{21}v_2^2\omega_{15}\omega_{12}\omega_{10}^2 + 12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10} + 6\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}^2 + 36\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}c_s^2 + 12\omega_{21}v_2^2\omega_{15}^2\omega_{12}\omega_{10}^3 - 18\omega_5^2\omega_{15}^2\omega_{10}^3c_s^2 + 12\omega_5^2v_2^2\omega_{15}\omega_{12}\omega_{10}^2 + 12\omega_5v_2^2\omega_{15}\omega_{12}\omega_{10}^3 + \omega_5^2\omega_{21}v_2^2\omega_{15}^2\omega_{12}\omega_{10}^3 + 54\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3c_s^2 + 12\omega_5^2\omega_{15}\omega_{12}\omega_{10}^3 - 36\omega_5\omega_{21}\omega_{15}^2\omega_{10}^2c_s^2 + 18\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}^3c_s^2 - 36\omega_5\omega_{21}\omega_{12}\omega_{10}^3c_s^2 - 12\omega_5^2v_2^2\omega_{15}\omega_{12}\omega_{10}^3 + 54\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{21}v_2^2\omega_{15}^2\omega_{12}\omega_{10}^2 - 36\omega_5\omega_{15}^2\omega_{12}\omega_{10}^3c_s^2 + 36\omega_5^2\omega_{21}\omega_{12}\omega_{10}^3c_s^2 + 18\omega_5^2\omega_{21}\omega_{15}^2\omega_{10}^2c_s^2 - 12\omega_5^2\omega_{15}\omega_{12}\omega_{10}^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10} - 2\omega_5^2\omega_{21}v_2^2\omega_{15}^2\omega_{12}\omega_{10}^2 - 18\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}^2c_s^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2 - 12\omega_5^2\omega_{21}v_2^2\omega_{15}^2\omega_{12}\omega_{10} + 12\omega_5\omega_{15}^2\omega_{12}\omega_{10}^3 - 18\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3 + 12\omega_5\omega_{21}\omega_{12}\omega_{10}^3 + 12\omega_5\omega_{21}\omega_{15}^2\omega_{10}^2 + 12\omega_5v_2^2\omega_{15}^2\omega_{10}^3 - 36\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}c_s^2 + 18\omega_5\omega_{21}v_2^2\omega_{15}^2\omega_{12}\omega_{10}^2 + 6\omega_5^2\omega_{15}^2\omega_{10}^3 + 6\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3 - 36\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3c_s^2 + 12\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3 - 12\omega_5\omega_{21}v_2^2\omega_{15}^2\omega_{12}\omega_{10}^3 - 36\omega_5^2\omega_{21}\omega_{12}\omega_{10}^2c_s^2 + 12\omega_5^2\omega_{21}v_2^2\omega_{15}^2\omega_{12} - 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3c_s^2$

$C_{10} = 12\omega_5^3\omega_{12}\omega_{10}c_s^2 + 72\omega_5^2\omega_{21}v_2^2\omega_{15}\omega_{12}\omega_{10} + 36\omega_5\omega_{21}v_2^2\omega_{12}\omega_{10}^2 - 12\omega_5^3\omega_{21}\omega_{12}\omega_{10}^2 + 12\omega_5^2\omega_{21}\omega_{12}\omega_{10}c_s^2 - 12\omega_5^2\omega_{21}\omega_{12}\omega_{10} - \omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 - 12\omega_5^2\omega_{15}\omega_{10}^2 - 12\omega_5^3\omega_{12}\omega_{10} + 12\omega_5^2\omega_{15}\omega_{10}^2c_s^2 - 36\omega_5^2\omega_{21}v_2^2\omega_{15}\omega_{12} - 12\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 - 18\omega_5^3v_2^2\omega_{15}\omega_{12}\omega_{10} - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_5^3\omega_{21}\omega_{12}\omega_{10}^2c_s^2 - 36\omega_5^3v_2^2\omega_{12}\omega_{10}^2 - 72\omega_5^2\omega_{21}v_2^2\omega_{12}\omega_{10}^2 + 36\omega_5^2v_2^2\omega_{12}\omega_{10}^2 + 24\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 36\omega_5^2\omega_{21}v_2^2\omega_{12}\omega_{10} + 18\omega_5^3v_2^2\omega_{15}\omega_{12}\omega_{10}^2 - 12\omega_5^2\omega_{15}\omega_{12}\omega_{10}^2c_s^2 + 36\omega_5^3v_2^2\omega_{12}\omega_{10} + 6\omega_5^3\omega_{21}\omega_{15}\omega_{10}c_s^2 + 18\omega_5^3\omega_{21}v_2^2\omega_{15}\omega_{10} - 6\omega_5^3\omega_{15}\omega_{12}\omega_{10}c_s^2 + 24\omega_5^2\omega_{21}\omega_{12}\omega_{10}^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10} - 36\omega_5\omega_{21}v_2^2\omega_{15}\omega_{12}\omega_{10} + 12\omega_5^3\omega_{12}\omega_{10}^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}c_s^2 - 6\omega_5^3\omega_{15}\omega_{10}^2c_s^2 + 12\omega_5^3\omega_{21}\omega_{12}\omega_{10} - 36\omega_5^2\omega_{21}v_2^2\omega_{15}\omega_{10} - 12\omega_5^2\omega_{21}\omega_{15}\omega_{10}c_s^2 + 6\omega_5^3\omega_{15}\omega_{12}\omega_{10}^2c_s^2 + 36\omega_5^2v_2^2\omega_{15}\omega_{10}^2 + 12\omega_5^2\omega_{12}\omega_{10}^2c_s^2 + 12\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10} - 36\omega_5^2v_2^2\omega_{15}\omega_{12}\omega_{10}^2 - 36\omega_5^3\omega_{21}v_2^2\omega_{12}\omega_{10} + 6\omega_5^3\omega_{15}\omega_{12}^2 - 4\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 + 6\omega_5^3\omega_{15}\omega_{12}\omega_{10} - 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}c_s^2 - 18\omega_5^3\omega_{21}v_2^2\omega_{15}\omega_{12}\omega_{10} - 6\omega_5^3\omega_{21}\omega_{15}\omega_{10} - 12\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 + 12\omega_5^2\omega_{15}\omega_{12}\omega_{10}^2 - 24\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10} + 18\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 + 12\omega_5\omega_{21}\omega_{12}\omega_{10}^2c_s^2 + 18\omega_5^3\omega_{21}v_2^2\omega_{15}\omega_{12} - 12\omega_5^3\omega_{21}\omega_{12}\omega_{10}c_s^2 - 6\omega_5^3\omega_{15}\omega_{12}\omega_{10}^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_{10} - 12\omega_5^2\omega_{12}\omega_{10}^2 - 12\omega_5^3\omega_{12}\omega_{10}^2c_s^2 + 36\omega_5^3\omega_{21}v_2^2\omega_{12}\omega_{10}^2 - 18\omega_5^3v_2^2\omega_{15}\omega_{10}^2 - 24\omega_5^2\omega_{21}\omega_{12}\omega_{10}^2c_s^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_{21}\omega_{12}\omega_{10}^2$

$C_{11} = -19\omega_5^3v_2^2\omega_{15}^2\omega_{10}^2 + 6\omega_5^2\omega_{15}^2\omega_{10}^2c_s^4 - 6\omega_5^2v_2^4\omega_{15}^2\omega_{10}^3 - 36\omega_5^2v_2^2\omega_{15}^2\omega_{10}c_s^2 + 12\omega_5\omega_{15}\omega_{10}^3c_s^4 + 6\omega_5\omega_{15}^2\omega_{10}^3c_s^2 - 108\omega_5^3v_2^2\omega_{15}\omega_{10}c_s^2 - 12\omega_5^2\omega_{15}\omega_{10}^2c_s^2 - 72\omega_5^3v_2^2\omega_{15}^2 + 36\omega_5^2v_2^2\omega_{15}\omega_{10}^2c_s^2 - 6\omega_5^3\omega_{15}\omega_{10}^3c_s^2 - 4\omega_5^3v_2^2\omega_{15}^2\omega_{10}^3 + 60\omega_5^3v_2^2\omega_{15}^2\omega_{10}^2c_s^2 + 12\omega_5^2\omega_{15}^2\omega_{10}c_s^2 - \omega_5^3\omega_{15}^2\omega_{10}^3c_s^4 - 90\omega_5^3v_2^4\omega_{15}^2\omega_{10} - 12\omega_5^3\omega_{15}^2c_s^2 + 6\omega_5^2v_2^2\omega_{15}^2\omega_{10}^3 + 19\omega_5^3v_2^4\omega_{15}^2\omega_{10}^2 + 18\omega_5^2\omega_{15}\omega_{10}^3c_s^2 + 36\omega_5v_2^2\omega_{15}\omega_{10}^3c_s^2 + 13\omega_5^2\omega_{15}^2\omega_{10}^3c_s^4 + 12\omega_5^2\omega_{15}^2\omega_{10}c_s^2 + 36\omega_5^3v_2^2\omega_{10}^2 + 12\omega_{15}^2\omega_{10}^3c_s^4 - 36\omega_5^2v_2^4\omega_{10}^3 + 4\omega_5^3v_2^4\omega_{15}^2\omega_{10}^3 + 12\omega_5^3v_2^2\omega_{15}^2\omega_{10}^3c_s^2 + \omega_5^3\omega_{15}^2\omega_{10}^2c_s^4 + 90\omega_5^3v_2^2\omega_{15}^2\omega_{10} + 6\omega_5^3\omega_{15}\omega_{10}^2c_s^2 - 36\omega_5^3v_2^2\omega_{10}^3 + 252\omega_5^3v_2^2\omega_{15}^2c_s^2 + 54\omega_5^2v_2^2\omega_{15}\omega_{10}^3c_s^2 - 18\omega_5v_2^2\omega_{15}^2\omega_{10}^3c_s^2 - 108\omega_5^3v_2^2\omega_{10}^2c_s^2 + 72\omega_5^3v_2^4\omega_{15}^2 - 12\omega_5^3\omega_{15}^2\omega_{10}c_s^4 - 5\omega_5^2\omega_{15}^2\omega_{10}^3c_s^2 - 39\omega_5^3v_2^4\omega_{15}\omega_{10}^3 - 18\omega_5^2\omega_{15}\omega_{10}^3c_s^4 + 36\omega_5^3v_2^2\omega_{15}\omega_{10} + 72\omega_5^3v_2^4\omega_{15}\omega_{10}^2 - 6\omega_5^3\omega_{15}\omega_{10}^2c_s^4 - 99\omega_5^3v_2^2\omega_{15}\omega_{10}^3c_s^2 - 36\omega_5^2v_2^2\omega_{15}\omega_{10}^3 - 3\omega_5^2v_2^2\omega_{15}^2\omega_{10}^3c_s^2 - 108\omega_5^2v_2^2\omega_{10}^2c_s^2 -$

$\omega_5^3\omega_{15}^2\omega_{10}^2c_s^2 + 36\omega_5^2v_2^2\omega_{10}^3 - 24\omega_5\omega_{15}^2\omega_{10}^3c_s^4 + 39\omega_5^3v_2^2\omega_{15}\omega_{10}^3 + 12\omega_5^2\omega_{15}\omega_{10}^2c_s^4 - 36\omega_5^3v_2^4\omega_{15}\omega_{10} - 6\omega_5^2\omega_{15}^2\omega_{10}^2c_s^2 + 36\omega_5^3v_2^4\omega_{10}^3 -$
$306\omega_5^3v_2^2\omega_{15}^2\omega_{10}c_s^2 - 12\omega_5\omega_{15}\omega_{10}^3c_s^2 + 108\omega_5^3v_2^2\omega_{10}^3c_s^2 + 36\omega_5^2v_2^4\omega_{15}\omega_{10}^3 - 12\omega_5^2\omega_{15}^2\omega_{10}c_s^4 - 72\omega_5^3v_2^2\omega_{15}\omega_{10}^2 + 18\omega_5^2v_2^2\omega_{15}^2\omega_{10}^2c_s^2 + 12\omega_5^3\omega_{15}^2c_s^4 -$
$36\omega_5^3v_2^4\omega_{10}^2 + 6\omega_5^3\omega_{15}\omega_{10}^3c_s^4 + 198\omega_5^3v_2^2\omega_{15}\omega_{10}^2c_s^2$

$C_{12} = 12 - 1008v_2^2\omega_{10}c_s^2 + 6\omega_{10}^3c_s^2 - 216v_2^4\omega_{10} - 216\omega_{10}c_s^4 + 90v_2^4\omega_{10}^2 - 9v_2^4\omega_{10}^3 - 78\omega_{10}^2c_s^2 + 144v_2^4 + 144c_s^4 - 18\omega_{10} + 198\omega_{10}c_s^2 + 672v_2^2c_s^2 +$
$234v_2^2\omega_{10} - 156v_2^2 + 82\omega_{10}^2c_s^4 - 132c_s^2 - 34v_2^2\omega_{10}^3c_s^2 + 10v_2^2\omega_{10}^3 + 8\omega_{10}^2 + 404v_2^2\omega_{10}^2c_s^2 - 98v_2^2\omega_{10}^2 - \omega_{10}^3 - 5\omega_{10}^3c_s^4$

$C_{13} = 12 - 648v_2^2\omega_{10}c_s^2 + 2\omega_{10}^3c_s^2 - 756v_2^4\omega_{10} - 36\omega_{10}c_s^4 + 310v_2^4\omega_{10}^2 - 29v_2^4\omega_{10}^3 - 22\omega_{10}^2c_s^2 + 504v_2^4 + 24c_s^4 - 18\omega_{10} + 54\omega_{10}c_s^2 + 432v_2^2c_s^2 +$
$378v_2^2\omega_{10} - 252v_2^2 + 14\omega_{10}^2c_s^4 - 36c_s^2 - 18v_2^2\omega_{10}^3c_s^2 + 14v_2^2\omega_{10}^3 + 8\omega_{10}^2 + 252v_2^2\omega_{10}^2c_s^2 - 154v_2^2\omega_{10}^2 - \omega_{10}^3 - \omega_{10}^3c_s^4$

$C_{14} = -18\omega_5^2\omega_{15}\omega_{12}\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 + 12\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8 - 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17} +$
$12\omega_5\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_{12}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8 + 6\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8 - 12\omega_5^2\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8 -$
$18\omega_5^3\omega_{15}\omega_{12}\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7\omega_{14}\omega_8 - 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14} + 12\omega_5\omega_{15}\omega_{12}\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 -$
$6\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8 - 12\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17} - 6\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_{12}\omega_{16}\omega_{10}\omega_{17}\omega_{14}\omega_8 -$
$12\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14} - 18\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8 + 12\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8 - 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7\omega_{14} +$
$12\omega_5^2\omega_{12}\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 + 6\omega_5^3\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8 + 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{10}\omega_7^2\omega_{14}\omega_8 + 12\omega_5^3\omega_{12}\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8 -$
$12\omega_5^3\omega_{15}\omega_{12}\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14} + 12\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8 + 24\omega_5\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 -$
$12\omega_5^3\omega_{15}\omega_{12}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_{12}\omega_7^2\omega_{17}\omega_{14}\omega_8 + 12\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14} - 12\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8 -$
$12\omega_5^3\omega_{12}\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 - 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{10}\omega_7\omega_{14}\omega_8 - \omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 + 10\omega_5^3\omega_{15}\omega_{12}\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 -$
$6\omega_5^3\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8 - 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_7^2\omega_{14}\omega_8 - 2\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 - 24\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 +$
$12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17} + 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14} - 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8 + 12\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_7^2\omega_{14}\omega_8 +$
$6\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8 + 12\omega_5^3\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8 - 12\omega_5^3\omega_{12}\omega_6\omega_{16}\omega_7^2\omega_{14}\omega_8$

$C_{15} = 12\omega_{16}\omega_{10}^2\omega_7^2c_s^4 - 12\omega_{16}^2\omega_{10}\omega_7^3c_s^4 + 54v_2^2\omega_{16}\omega_{10}^3\omega_7^2c_s^2 + 36v_2^2\omega_{16}\omega_{10}\omega_7^3 - 108v_2^2\omega_{10}^2\omega_7^3c_s^2 - \omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 + 36v_2^4\omega_{16}\omega_{10}^3\omega_7^2 +$
$6\omega_{16}^2\omega_{10}^3\omega_7c_s^2 + 18v_2^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 19v_2^2\omega_{16}^2\omega_{10}^2\omega_7^3 - 108v_2^2\omega_{16}\omega_{10}\omega_7^3c_s^2 + 13\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 - 6\omega_{16}\omega_{10}^3\omega_7^3c_s^2 - 39v_2^4\omega_{16}\omega_{10}^3\omega_7^3 - 90v_2^4\omega_{16}^2\omega_{10}\omega_7^3 -$
$6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 99v_2^2\omega_{16}\omega_{10}^3\omega_7^3c_s^2 + 6v_2^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 12\omega_{16}^2\omega_{10}\omega_7^2c_s^4 + 12\omega_{16}\omega_{10}^3\omega_7c_s^4 + 252v_2^2\omega_{16}^2\omega_7^3c_s^2 - 6\omega_{16}\omega_{10}^2\omega_7^3c_s^4 + 72v_2^4\omega_{16}\omega_{10}^2\omega_7^3 -$
$12\omega_{16}^2\omega_7^3c_s^2 + 18\omega_{16}\omega_{10}^3\omega_7^2c_s^2 - \omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 - 18v_2^2\omega_{16}^2\omega_{10}^3\omega_7c_s^2 - 4v_2^2\omega_{16}^2\omega_{10}^3\omega_7^3 + 60v_2^2\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 + 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2 - 12\omega_{16}\omega_{10}^3\omega_7c_s^2 -$
$36v_2^4\omega_{16}\omega_{10}\omega_7^3 + 36v_2^4\omega_{10}^3\omega_7^3 + 6\omega_{16}\omega_{10}^2\omega_7^3c_s^2 + 36v_2^2\omega_{10}^2\omega_7^3 - 3v_2^2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 36v_2^2\omega_{16}\omega_{10}^3\omega_7^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4 - 36v_2^4\omega_{10}^3\omega_7^2 +$
$108v_2^2\omega_{10}^3\omega_7^3c_s^2 + 19v_2^4\omega_{16}^2\omega_{10}^2\omega_7^3 + 12\omega_{16}^2\omega_7^3c_s^4 + 39v_2^2\omega_{16}\omega_{10}^3\omega_7^3 - 18\omega_{16}\omega_{10}^3\omega_7^2c_s^4 - 306v_2^2\omega_{16}^2\omega_{10}\omega_7^3c_s^2 - 72v_2^2\omega_{16}^2\omega_7^3 + 36v_2^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2 +$
$90v_2^2\omega_{16}^2\omega_{10}\omega_7^3 + \omega_{16}^2\omega_{10}^2\omega_7^3c_s^4 + 12v_2^2\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2 - 36v_2^2\omega_{10}^3\omega_7^3 - 24\omega_{16}^2\omega_{10}^3\omega_7c_s^4 - 36v_2^4\omega_{10}^2\omega_7^3 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2 + 12\omega_{16}^2\omega_{10}\omega_7^3c_s^2 -$
$6v_2^4\omega_{16}^2\omega_{10}^3\omega_7^2 + 12\omega_{16}^2\omega_{10}^3c_s^4 + 36v_2^2\omega_{10}^3\omega_7^2 + 198v_2^2\omega_{16}\omega_{10}^2\omega_7^3c_s^2 - 36v_2^2\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 6\omega_{16}\omega_{10}^3\omega_7^3c_s^4 - 72v_2^2\omega_{16}\omega_{10}^2\omega_7^3 + 36v_2^2\omega_{16}\omega_{10}^3\omega_7c_s^2 +$
$72v_2^4\omega_{16}^2\omega_7^3 + 4v_2^4\omega_{16}^2\omega_{10}^3\omega_7^3 - 5\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 108v_2^2\omega_{10}^3\omega_7^2c_s^2$

$C_{16} = -12\omega_5v_3^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20} + 6\omega_5v_3^2v_2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{14}\omega_8 + 12v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14} + 12v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 +$
$12\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14} + 12\omega_5v_3^2v_2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20} - 12\omega_5v_1^2v_2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14}\omega_8 - 3\omega_5v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$6v_3^2v_1\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 3\omega_5v_1v_2^2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 12v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 + 12v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14} +$
$6\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 + 6\omega_5v_1^2v_2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{14}\omega_8 + 12v_3^2v_2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 + 12v_3^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14} -$
$6v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{14}\omega_8 + 12v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20} + 12\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{14}\omega_8 + 12\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20} -$
$6\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{14}\omega_8 + 6\omega_5v_1v_2^2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14} - 6\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{14} + 6v_3^2v_1v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 3\omega_5v_3^2v_1^2v_2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_{14} -$
$3\omega_5v_3^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 6\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14}\omega_8 + 12\omega_5v_1^2v_2\omega_{12}\omega_6c_s^2\omega_{14}\omega_8 - 12\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_{14}\omega_8 -$
$12v_3^2v_1\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14} - 12v_3^2v_1\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 - 12\omega_5v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14} - 6\omega_5v_1^2v_2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 +$
$6\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_8 + 6v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 3\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 6\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_{20}\omega_{14} - 6\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 - 6\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14} -$
$12v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 + 2\omega_5v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8 - 6\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_7\omega_{14}\omega_8 + 6\omega_5v_3^2v_1\omega_{12}\omega_6\omega_7c_s^2\omega_{14}\omega_8 +$
$6v_1v_2^2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 6\omega_5v_3^2v_1v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 + 12v_3^2v_1^2v_2\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 - 6\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_{20}\omega_8 -$
$4\omega_5v_2\omega_{12}\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8 + 12\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14}\omega_8 - 12\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14} - 6\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 -$
$12v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14} + 6\omega_5v_1v_2^2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 + 12\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14} - 6\omega_5v_1^2v_2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_8 -$
$12\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20} + 3\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_{14} + 12\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{14} +$
$12v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{14} + 6v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14}\omega_8 - 6\omega_5v_3^2v_2\omega_{12}\omega_6\omega_7c_s^2\omega_{14}\omega_8 - 12\omega_5v_3^2v_1\omega_{12}\omega_6c_s^2\omega_{14}\omega_8 -$
$12\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20} + 6\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_{20}\omega_{14}\omega_8 - 12\omega_5v_1^2v_2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{14} - 12v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20} -$
$3\omega_5v_3^2v_1v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{14}\omega_8 - 6v_3^2v_1^2v_2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 3\omega_5v_1v_2^2\omega_{12}\omega_6\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$12v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20} + 6\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{14}\omega_8 + 6v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{14}\omega_8 - 6\omega_5v_1^2v_2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5v_1^2v_2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14} - 12\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_{20} - 12\omega_5v_3^2v_2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14}\omega_8 + 6v_3^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20} - 12v_3^2v_1\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20} + 6\omega_5v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14}\omega_8 + 6v_3^2v_1\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14}\omega_8 +$
$12\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_{14}\omega_8 + 6\omega_5v_3^2v_1\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 + 12\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14} - 3\omega_5v_3^2v_1\omega_{12}\omega_6\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 +$
$12v_1^2v_2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 + 12v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14} - 12\omega_5v_1v_2^2\omega_{12}\omega_6c_s^2\omega_{14}\omega_8 + 3\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20} +$
$6\omega_5v_3^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14}\omega_8 + 12\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14}\omega_8 + 6v_3^2v_1\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 3\omega_5v_1^2v_2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 +$
$6v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 3\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 12v_3^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 + 12v_3^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20} -$
$12\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14} - 6\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{14}\omega_8 - 12v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14} - 12\omega_5v_3^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14} -$
$6\omega_5v_3^2v_2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 + 3\omega_5v_3^2v_2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5v_3^2v_2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14} - 6\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 -$
$12v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 - 12v_3^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14} + 6\omega_5v_1v_2^2\omega_{12}\omega_6\omega_7c_s^2\omega_{14}\omega_8 - 6v_3^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14}\omega_8 -$
$3\omega_5v_3^2v_1v_2^2\omega_{12}\omega_6\omega_7\omega_{20}\omega_{14}\omega_8 - 12v_3^2v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{14} - 12\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{14} + 12\omega_5v_1^2v_2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20} +$
$6\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_8 + 3\omega_5v_1^2v_2\omega_{12}\omega_6\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 12v_1v_2^2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14} - 12v_1v_2^2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8 -$
$6v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14}\omega_8 - 6\omega_5v_3^2v_1\omega_{12}\omega_6\omega_{19}\omega_7c_s^2\omega_{14}\omega_8 - 12\omega_5v_1v_2^2\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14} + 12\omega_5v_3^2v_1^2v_2\omega_{12}\omega_6\omega_{19}\omega_{20} +$

$6\omega_5 v_3^2 v_1 \omega_{12}\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5 v_1 v_2^2\omega_{12}\omega_6\omega_{19}\omega_7 c_s^2\omega_{20} - 6v_1 v_2^2\omega_{12}\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12v_3^2 v_1^2 v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20} +$
$3\omega_5 v_3^2 v_2\omega_{12}\omega_6\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5 v_3^2 v_1 v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20} + 12\omega_5 v_3^2 v_1\omega_{12}\omega_6\omega_{19} c_s^2\omega_{20}\omega_{14} + 12v_3^2 v_1\omega_{12}\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 +$
$6\omega_5 v_1^2 v_2\omega_{12}\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + 12\omega_5 v_3^2 v_2\omega_{12}\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} - 6\omega_5 v_1^2 v_2\omega_{12}\omega_6\omega_7 c_s^2\omega_{14}\omega_8 - 6v_3^2 v_2\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$6\omega_5 v_3^2 v_1 v_2^2\omega_{12}\omega_6\omega_7\omega_{14}\omega_8 - 6\omega_5 v_3^2 v_2\omega_{12}\omega_6\omega_{19} c_s^2\omega_{20}\omega_8 + 6\omega_5 v_3^2 v_1 v_2^2\omega_{12}\omega_6\omega_{20}\omega_{14}\omega_8 + 12\omega_5 v_3^2 v_1 v_2^2\omega_{12}\omega_6\omega_{19}\omega_{20}\omega_{14} +$
$6\omega_5 v_3^2 v_2\omega_{12}\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 - 6\omega_5 v_3^2 v_2\omega_{12}\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 + 12v_3^2 v_1\omega_{12}\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} + 12\omega_5 v_1^2 v_2\omega_{12}\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} -$
$3\omega_5 v_3^2 v_1\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 6v_1^2 v_2\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 3\omega_5 v_3^2 v_1^2 v_2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_5 v_3^2 v_2\omega_{12}\omega_6\omega_{19} c_s^2\omega_{20}\omega_{14} -$
$6v_3^2 v_1 v_2^2\omega_{12}\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 12\omega_5 v_3^2 v_2\omega_{12}\omega_6 c_s^2\omega_{14}\omega_8 - 12v_3^2 v_1 v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 - 6\omega_5 v_3^2 v_1^2 v_2\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 + 6\omega_5 v_3^2 v_1 v_2^2\omega_{12}\omega_6\omega_{19}\omega_{20}\omega_8$

$C_{17} = 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14} - 4\omega_5 v_3^2 v_2^2\omega_{12}\omega_{14}\omega_8 + 2v_3^2 v_2^2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_3^2 v_2^2\omega_{12}\omega_7\omega_{14}\omega_8 - \omega_5 v_3^2\omega_{12}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5 v_3^2 v_2^2\omega_{19}\omega_7\omega_{20}\omega_8 + 2\omega_5 v_3^2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_8 - 4v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} + 4v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} + 2\omega_5 v_3^2 v_2^2\omega_{12}\omega_{20}\omega_{14}\omega_8 +$
$4\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_{20}\omega_{14} - \omega_5 v_3^2 v_2^2\omega_{12}\omega_7\omega_{20}\omega_{14}\omega_8 - 8\omega_5 v_1 v_2\omega_{12}\omega_{19} c_s^2\omega_{14}\omega_8 + 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_{20} + 4\omega_5 v_1 v_2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8 +$
$4\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_8 + 4\omega_5 v_3^2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_{14} + 4\omega_5 v_2^2\omega_{12}\omega_{19} c_s^2\omega_{14}\omega_8 + 2\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_{20}\omega_8 + 4v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 +$
$2\omega_5 v_3^2\omega_{12} c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 8v_3^2 v_1 v_2\omega_{19}\omega_7\omega_{20}\omega_8 - 4v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 + 8v_3^2 v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{20} -$
$2v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} - 2\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + 2\omega_5 v_3^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + 8\omega_5 v_1 v_2\omega_{12} c_s^2\omega_{14}\omega_8 +$
$4\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20} - 2\omega_5 v_2^2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} - 8\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} + 2v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{14}\omega_8 +$
$2\omega_5 v_2^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + 4v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14} - 2\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 + 4v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_2^2\omega_{12}\omega_{19} c_s^2\omega_{20} -$
$4\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_{14} + 2\omega_5 v_3^2 v_1 v_2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{14} - 8v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + \omega_5 v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$\omega_5 v_2^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 4v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_8 - 4\omega_5 v_1 v_2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + 4\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} - 8v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} +$
$8v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} - 4\omega_5 v_1 v_2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_8 - 4v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{14} + 4\omega_5 v_2^2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_{14} + 2v_3^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$4\omega_5 v_3^2\omega_{12}\omega_{19} c_s^2\omega_{14}\omega_8 + 2\omega_5 v_2^2\omega_{12} c_s^2\omega_{20}\omega_{14}\omega_8 - 8\omega_5 v_1 v_2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_{14} + 2v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 + 2\omega_5 v_2^2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_8 +$
$4\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_{14}\omega_8 - 4v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} - 2v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_3^2\omega_{12}\omega_{19} c_s^2\omega_{20} -$
$4\omega_5 v_1 v_2\omega_{12} c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_1 v_2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 8\omega_5 v_1 v_2\omega_{12}\omega_{19} c_s^2\omega_{14} + 4\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{14}\omega_8 + 8v_1 v_2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 +$
$2\omega_5 v_3^2\omega_{12}\omega_7 c_s^2\omega_{14}\omega_8 + 2v_2^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_8 - 8\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} + 4\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 -$
$4\omega_5 v_3^2\omega_{12} c_s^2\omega_{14}\omega_8 + \omega_5 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{14} + 8v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{14} + 2v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 -$
$4\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14} + 2\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_7\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} - 2\omega_5 v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 + 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_{14} +$
$4v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 4v_2^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 - 8v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14} - 4v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} - \omega_5 v_3^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$4\omega_5 v_2^2\omega_{12} c_s^2\omega_{14}\omega_8 - 8v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_8 - 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_{14}\omega_8 - 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_{20}\omega_{14} - 4\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{20}\omega_{14}\omega_8 -$
$4v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} + 2\omega_5 v_1 v_2\omega_{12}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_3^2 v_1 v_2\omega_{19}\omega_7\omega_{20}\omega_8 - 4\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_7\omega_{14}\omega_8 + 8\omega_5 v_1 v_2\omega_{12}\omega_{19} c_s^2\omega_{20} -$
$2\omega_5 v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 - 4\omega_5 v_3^2\omega_{12}\omega_{19} c_s^2\omega_{14} - 4v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{14}\omega_8 - 4v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20} - 4\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_{20}\omega_8 -$
$4v_1 v_2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5 v_3^2 v_2^2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_3^2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 4v_3^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 -$
$4\omega_5 v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} - 4\omega_5 v_1 v_2\omega_{12}\omega_7 c_s^2\omega_{14}\omega_8 - \omega_5 v_3^2\omega_{12}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_{20}\omega_{14}\omega_8 - 2v_2^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{14}\omega_8 + 4\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 - 2\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{14}\omega_8 - 4v_3^2 v_2^2\omega_{19}\omega_7\omega_{20}\omega_8 + 4v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} +$
$8v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} - 4v_3^2 v_1 v_2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} - 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{20} + 2\omega_5 v_2^2\omega_{12}\omega_7 c_s^2\omega_{14}\omega_8 -$
$2\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 8\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} - 4\omega_5 v_2^2\omega_{12}\omega_{19} c_s^2\omega_{14} - 4\omega_5 v_3^2 v_2^2\omega_{12}\omega_{19}\omega_{20} + 4v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8$

$C_{18} =$
$2\omega_5^2\omega_{12}\omega_7^2 c_s^4\omega_{14}\omega_8 - 8\omega_5 v_3^2 v_1 v_2\omega_{19}\omega_7^2\omega_{20}\omega_8 - 4\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20} - 2\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_7\omega_{20}\omega_{14}\omega_8 - 4\omega_5\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{14} + 4\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7\omega_{14} -$
$4\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 + 4\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8 - 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{20} + \omega_5^2 v_3^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5^2\omega_{12}\omega_{19}\omega_7 c_s^4\omega_{20} -$
$2\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8 - \omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 - 8\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} + 4\omega_5 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{14} +$
$4\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20} + 2\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{14}\omega_8 + 2\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 + 4\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} - 2\omega_5^2\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{14}\omega_8 +$
$4\omega_{12}\omega_{19}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 + 4\omega_5\omega_{12}\omega_{19} c_s^4\omega_{20}\omega_{14}\omega_8 + 8\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14} + 2\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_7^2\omega_{20}\omega_{14}\omega_8 -$
$4\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 + 4\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14} + 2\omega_5 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 +$
$8\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{14} - 2\omega_5^2 v_1^2\omega_{12}\omega_7^2 c_s^2\omega_{14}\omega_8 - 4\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8 + 4\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_8 - 8\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14} -$
$8\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20} - 4\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5^2\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_8 + 4\omega_5\omega_{19}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 - 2\omega_5 v_1^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$4\omega_5 v_1 v_2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_5^2 v_3^2 v_1^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_1^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 - \omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_8 -$
$2\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_7^2\omega_{14}\omega_8 - 2\omega_5^2 v_3^2 v_1^2\omega_{19}\omega_7^2\omega_{20}\omega_8 + 2\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8 + 4\omega_5^2 v_3^2\omega_{12}\omega_7 c_s^2\omega_{14}\omega_8 - 2\omega_5^2 v_1^2\omega_{12}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 +$
$8\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{14}\omega_8 - 4\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 - 4\omega_5^2\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_{14} + 4\omega_5^2 v_1 v_2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 - 4\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14} -$
$4\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{20} + 4\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_{14} - 8\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_7\omega_{14}\omega_8 - 2\omega_5^2 v_3^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 - 4\omega_5 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14} +$
$\omega_5^2 v_1^2\omega_{12}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 + 8\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14} - 8\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{20} - 2\omega_5^2 v_1 v_2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5^2\omega_{12}\omega_{19}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 - 4\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} - 4\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 + 8\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14} + 4\omega_5^2\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{14} -$
$4\omega_5 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 + 4\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} + 4\omega_5 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14} - 8\omega_5^2 v_1 v_2\omega_{12}\omega_7 c_s^2\omega_{14}\omega_8 + 2\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + 8\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 + 4\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_7\omega_{14}\omega_8 - 2\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_8 - 2\omega_5^2 v_1^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 +$
$8\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{20} - 2\omega_5 v_3^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_3^2 v_1^2\omega_{19}\omega_7^2\omega_{20}\omega_8 + 2\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8 + 4\omega_5\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_8 -$
$2\omega_5^2\omega_{19}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 + 4\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} + \omega_5^2 v_3^2 v_1^2\omega_{12}\omega_7^2\omega_{20}\omega_8 + 4\omega_5^2 v_3^2 v_1^2\omega_{19}\omega_7^2\omega_{20}\omega_8 - 4\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14} +$
$4\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_7^2\omega_{14}\omega_8 - \omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5^2 v_3^2\omega_{12}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{20} + 4\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14} -$
$4\omega_5^2\omega_{12}\omega_7 c_s^4\omega_{14}\omega_8 + 4\omega_5\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_{14} - 4\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{14}\omega_8 - 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{14} - 4\omega_5^2\omega_{12}\omega_{19}\omega_7 c_s^4\omega_{14} +$
$8\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 - 4\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14} + \omega_5^2 v_3^2\omega_{12}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_3^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 -$
$4\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} - 8\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} + 4\omega_5^2 v_1^2\omega_{12}\omega_7 c_s^2\omega_{14}\omega_8 - 4\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 + 4\omega_5^2\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{14}\omega_8 +$
$4\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{14}\omega_8 - 4\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 + 4\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_5^2\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_8 - 2\omega_5 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{14}\omega_8 +$
$2\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + 4\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7\omega_{20} - 4\omega_5\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{20} - 4\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14} +$
$4\omega_5 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20} - 2\omega_5\omega_{12}\omega_7^2 c_s^4\omega_{20}\omega_{14}\omega_8 + 4\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} - 4\omega_5 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_{14} + 4\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 -$
$8\omega_5 v_1 v_2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 + 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_{14} + 4\omega_5^2\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_{14}\omega_8 + 2\omega_5\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_{14}\omega_8 + \omega_5^2 v_1^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$4\omega_5\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_8 - 8\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7\omega_{14} + 8\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20} + 2\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 2\omega_5^2 v_1 v_2\omega_{12}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5^2 v_3^2\omega_{12}\omega_7^2 c_s^2\omega_{14}\omega_8 - 4\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 - 2\omega_5 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8 + 4\omega_5^2\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{20} + 8\omega_5^2 v_1 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} -$

$4\omega_5 v_3^2 v_1^2 \omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_8 + 4\omega_5 v_3^2 v_1 v_2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5^2\omega_{12}\omega_{19}\omega_7 c_s^4\omega_{20}\omega_8 + 8\omega_5 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_8 - 2\omega_5 v_3^2 v_1^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 -$
$8\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_{14} + 2\omega_5\omega_{12}\omega_{19}\omega_7^2 c_s^4\omega_{14}\omega_8 + 4\omega_5^2 v_1 v_2\omega_{12}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_5^2\omega_{12}\omega_{19} c_s^4\omega_{20}\omega_{14}\omega_8 + 2\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 -$
$4\omega_5^2 v_3^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20} - 4\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7^2\omega_{14} - 4\omega_5^2 v_3^2 v_1^2\omega_{12}\omega_{19}\omega_7\omega_{14}\omega_8 + 4\omega_5^2 v_1 v_2\omega_{12}\omega_7^2 c_s^2\omega_{14}\omega_8 - 8\omega_5 v_1 v_2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{14} -$
$4\omega_5^2 v_3^2 v_1 v_2\omega_{12}\omega_{19}\omega_7^2\omega_{20}\omega_8 + 4\omega_5^2 v_1^2\omega_{12}\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14} + 4\omega_5\omega_{12}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8 - 2\omega_5^2 v_3^2 v_1 v_2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5\omega_{12}\omega_{19}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8$

$C_{19} = 4v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{20} - 4\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_{14} + 2\omega_5 v_1\omega_{12}\omega_7 c_s^2\omega_{14}\omega_8 - 4\omega_5 v_2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_{14} - \omega_5 v_1 v_2^2\omega_{12}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + 4\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{14} - 2\omega_5 v_2\omega_{12} c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5 v_1\omega_{12}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_1 v_2^2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$2\omega_5 v_2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_8 + 4v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} + 4\omega_5 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} + 4\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_{20} - 2\omega_5 v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 +$
$2\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_8 - 2\omega_5 v_2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + \omega_5 v_2\omega_{12}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{14}\omega_8 - 4\omega_5 v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} +$
$2v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14} - 4v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} + 4v_1^2 v_2\omega_{19}\omega_7\omega_{20}\omega_8 - 4\omega_5 v_1\omega_{12}\omega_{19} c_s^2\omega_{20} -$
$2v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_1 v_2^2\omega_{12}\omega_{14}\omega_8 + 2\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{14}\omega_8 - 2\omega_5 v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 -$
$2v_2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + 4v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14} - 4\omega_5 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} - 4v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20} - 4v_1\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + 4v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_8 -$
$4\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{14} + 2\omega_5 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 + 2v_1\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} -$
$4v_1 v_2^2\omega_{19}\omega_7\omega_{20}\omega_8 + 4\omega_5 v_2\omega_{12}\omega_{19} c_s^2\omega_{20} + \omega_5 v_1^2 v_2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 2v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_2\omega_{12}\omega_{19} c_s^2\omega_{14}\omega_8 + 4\omega_5 v_2\omega_{12} c_s^2\omega_{14}\omega_8 -$
$4v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20} + 2\omega_5 v_1\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_8 + 2\omega_5 v_1 v_2^2\omega_{19}\omega_7\omega_{20}\omega_8 + 2\omega_5 v_1 v_2^2\omega_{12}\omega_7\omega_{14}\omega_8 - 2\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_8 - 4\omega_5 v_1\omega_{12}\omega_{19} c_s^2\omega_{14} +$
$4\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_{20}\omega_{14} + 2\omega_5 v_1 v_2^2\omega_{12}\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_1\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_{14} - 2\omega_5 v_2\omega_{12}\omega_7 c_s^2\omega_{14}\omega_8 + \omega_5 v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$4\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14} + 2v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 + \omega_5 v_2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_5 v_1\omega_{12} c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_{20}\omega_8 - 2v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{14}\omega_8 - 2v_1^2 v_2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 + 4v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} - 4\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_{14}\omega_8 +$
$4\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_{14} + \omega_5 v_1^2 v_2\omega_{12}\omega_7\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_{20} + 4v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{14} + 2\omega_5 v_1\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 + 4\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20} -$
$2v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 - \omega_5 v_1\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 4v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} + 4\omega_5 v_2\omega_{12}\omega_{19} c_s^2\omega_{14} + \omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$4\omega_5 v_1\omega_{12} c_s^2\omega_{14}\omega_8 - 2\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_{20}\omega_8 + 4v_2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 - 2\omega_5 v_1^2 v_2\omega_{12}\omega_7\omega_{14}\omega_8 - 4v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 - 2\omega_5 v_1^2 v_2\omega_{19}\omega_7\omega_{20}\omega_8 -$
$2\omega_5 v_1\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5 v_2\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_5 v_1 v_2^2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 - 4\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_{20}\omega_{14} - 2\omega_5 v_1^2 v_2\omega_{12}\omega_{20}\omega_{14}\omega_8 +$
$4\omega_5 v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{14} - 4v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14} - 4v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{14} + 4v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} - 2\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_7\omega_{14}\omega_8 +$
$4\omega_5 v_1^2 v_2\omega_{12}\omega_{14}\omega_8 - 4\omega_5 v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{20} - 2\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_{20}\omega_{14}\omega_8 + 4\omega_5 v_1\omega_{12}\omega_{19} c_s^2\omega_{14}\omega_8 + 2\omega_5 v_2\omega_{12}\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8 -$
$4v_1^2 v_2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_8 + 4\omega_5 v_1 v_2^2\omega_{12}\omega_{19}\omega_{14}\omega_8 + 4v_1\omega_{12}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 - 4\omega_5 v_2\omega_{12}\omega_{19} c_s^2\omega_{20}$

$C_{20} = 2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 - 2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 - v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 +$
$2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 - \omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 + \omega_5 v_3^2 v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 -$
$2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 + \omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 -$
$\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 + \omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3^2 v_1\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 -$
$2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{17} + 2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{17} - \omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 -$
$\omega_5 v_1 v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 - 2\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17} + 2\omega_5 v_3^2 v_1 v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8 - \omega_5 v_3^2 v_1\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17} + 2\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - \omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 - 2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 + 2\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20} - 2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 +$
$\omega_5 v_3^2 v_1 v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{17}\omega_8 + 2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 - 2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17} - 2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 + 2v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17} +$
$2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17} - 2v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 +$
$2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} + \omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 -$
$\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5 v_3^2 v_1 v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3^2 v_1\omega_{15}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8 - 2\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} - 2v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 + \omega_5 v_3 v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 -$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10} c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{17} +$
$2v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} + 2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8 + 2v_3^2 v_1 v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_8 +$
$\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{15}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17} + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{17} -$
$\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 - \omega_5 v_3 v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{17}\omega_8 + v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{10} c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3 v_1^2 v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - 2v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} -$
$2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_8 + 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_8 - 2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17} + \omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20} -$
$2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} -$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17} - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3 v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 + \omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 - 2v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17} +$
$2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - 2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17} + 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20} -$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 - 2v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} + 2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 +$
$\omega_5 v_3 v_1^2 v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 + 2\omega_5 v_3 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8 + v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 + v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17} -$
$2\omega_5 v_3 v_2^2\omega_{15}\omega_{16}\omega_{10} c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{17} - 2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + \omega_5 v_3 v_1^2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_8 + \omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20} -$
$2\omega_5 v_3^2 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 - v_3^2 v_1 v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20} +$

$2\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20} + 2v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2v_1v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + \omega_5v_3v_1^2v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 + 2\omega_5v_3v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 +$
$\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2\omega_5v_1v_2^2\omega_{15}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17} - v_3^2v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$\omega_5v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 + v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 +$
$2v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} - \omega_5v_3^2v_1\omega_{15}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8 -$
$\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17} +$
$v_3v_1^2v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 - \omega_5v_3v_1^2v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8 -$
$2\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} - 2\omega_5v_3^2v_1v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + \omega_5v_3v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 -$
$\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 - v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 -$
$v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 - 2\omega_5v_3v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 + 2\omega_5v_3^2v_1\omega_{15}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} +$
$2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + \omega_5v_1v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 -$
$2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + v_3v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 -$
$2v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} - 2\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 - \omega_5v_3^2v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 -$
$\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} +$
$2\omega_5v_1v_2^2\omega_{15}\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 +$
$2\omega_5v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3v_1^2v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8 + 2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5v_1v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 -$
$2\omega_5v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20} + v_3v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 -$
$v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} + 2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$\omega_5v_3v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 2v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17} - 2\omega_5v_3v_2^2\omega_{15}\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} - 2\omega_5v_3v_1^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 +$
$2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} + 2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17} - 2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 -$
$\omega_5v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_3^2v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2\omega_5v_3v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 +$
$2\omega_5v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20} - \omega_5v_3^2v_1\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} -$
$2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} + 2\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 -$
$2\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2v_3v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 -$
$2v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17} + 2v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 + \omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20} - 2v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} - v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17} - 2\omega_5v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} + 2\omega_5v_3v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_8 - \omega_5v_1v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5v_3v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 - \omega_5v_3v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20} + 2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 +$
$\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 + \omega_5v_3^2v_1\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 + 2v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} + v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 +$
$\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 - v_1v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_1v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 +$
$\omega_5v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - \omega_5v_3v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 +$
$2\omega_5v_3^2v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 + 2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 -$
$2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5v_3v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} -$
$\omega_5v_3v_1^2v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_5v_3^2v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17} -$
$2\omega_5v_3v_1^2\omega_{15}\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2\omega_5v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5v_3v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5v_3v_1^2v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2\omega_5v_3v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}$

$C_{21} = -12\omega_5^2v_3^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 - 18\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 - 18\omega_5^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5v_3v_1\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 6\omega_5^2v_3^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2v_3v_1\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5^2v_3v_1\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8 - 12\omega_5^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 -$
$12\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 - 24\omega_5v_3v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20} - 12\omega_5^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8 -$
$24\omega_5^2v_3v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 + 6\omega_5^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2v_3^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8 +$
$6\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8 - 12\omega_5^2v_3v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8 - 12\omega_5^2v_3^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 - 24\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5^2v_3^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 6\omega_5v_3^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 - 12\omega_5^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5^2v_3^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20} + 6\omega_5v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2v_3^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 -$
$24\omega_5^2v_3v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20} - 6\omega_5v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 - 12\omega_5^2v_3^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 -$
$6\omega_5^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 24\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17} + 12\omega_5^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17} +$
$12\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8 + 12\omega_5^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 6\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8 -$
$6\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2v_3v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2v_3^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20} + 12\omega_5^2v_3^2v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5^2v_3^2v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8 - 6\omega_5^2v_3^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8 +$
$12\omega_5^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 - 24\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 + 6\omega_5^2v_3^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} - 24\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8 + 12\omega_5v_3v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8 - 12\omega_5^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5^2v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17} + 12\omega_5^2v_2^2\omega_{15}\omega_6\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8 + 24\omega_5^2v_3v_1v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17} +$

$12\omega_5^2 v_3 v_1 v_2^2 \omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 + 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8 - 6\omega_5 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 -$
$\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20} +$
$12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17} + 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_8 + 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8 +$
$12\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8 + 12\omega_5^2 v_3 v_1 v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 +$
$12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17} + 12\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 -$
$12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8 - 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17} -$
$6\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 + 12\omega_5\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17} +$
$12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 +$
$6\omega_5 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 - 6\omega_5 v_3^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17} +$
$12\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17} - 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8 - 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20} + 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8 + 6\omega_5 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8 - 24\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17} - 6\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 +$
$24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 - 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20} + 6\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 -$
$6\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8 + 6\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 + 12\omega_5^2\omega_{15}\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 + 12\omega_5 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 + 12\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$24\omega_5^2 v_3 v_1\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 + 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 - 12\omega_5^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 - 6\omega_5 v_3^2 v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$6\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8 - 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17} + 12\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8 -$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17} + 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 6\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17} + 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20} - 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8 -$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8 + 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8 - 6\omega_5 v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17} - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 + 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8 +$
$6\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 - 6\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8 + 6\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 +$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 - 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$24\omega_5 v_3 v_1\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 - 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17} + 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 -$
$12\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 + 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8 - 24\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20} +$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 + 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_8 -$
$2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8 - 12\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8 - 12\omega_5 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 - 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17} +$
$12\omega_5^2\omega_{15}\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 + 24\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17} + 12\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20} -$
$6\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 + 12\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2 v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 + 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17} -$
$6\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8 - 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 - 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8 - 6\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$6\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8 - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20} - 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$24\omega_5 v_3 v_1 v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 + 12\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8 +$
$12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_8 - 24\omega_5^2 v_3 v_1 v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8 - 12\omega_5 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 + 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 -$
$12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 - 12\omega_5 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 + 24\omega_5 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17} +$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17} + 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20} + 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8 +$
$12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20} - 12\omega_5 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 +$
$12\omega_5 v_3^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 + 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 + 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17} +$
$12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5 v_3^2 v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 + 10\omega_5^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17} + 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17} + 12\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 +$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17} - 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8 + 12\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 - 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8 + 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 + 12\omega_5 v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 - 12\omega_5^2\omega_{15}\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 -$
$6\omega_5^2 v_3^2 v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 + 6\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 + 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8 +$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 + 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17} + 12\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8 -$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17} + 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 6\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17} + 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20} - 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8 -$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8 + 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8 - 6\omega_5 v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17} - 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 + 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8 +$
$6\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 - 6\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8 + 6\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 +$
$24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 - 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$24\omega_5 v_3 v_1\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 - 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17} + 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 -$
$12\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 + 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8 - 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20} +$
$12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8 + 24\omega_5^2 v_3 v_1\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 +$
$12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17} +$
$6\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8 -$

$6\omega_5^2 v_2^2 \omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 + 6\omega_5^2 v_3^2 v_2^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$18\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 - 12\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 + 24\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17} + 24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8 + 6\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$24\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 + 12\omega_5^2 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20} - 12\omega_5^2 v_3 v_1 v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5 v_2^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17} - 12\omega_5 v_3^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17} - 6\omega_5^2 v_3^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8 -$
$24\omega_5^2 v_3 v_1 v_2^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_8 + 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8 - 6\omega_5\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 +$
$24\omega_5^2 v_3 v_1 v_2^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 - 24\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8$

$C_{22} = 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} + \omega_5 v_1\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 - 2\omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + \omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 + v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 -$
$\omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2\omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 +$
$\omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_1\omega_{15}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5 v_3^2 v_1\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 - \omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8 - \omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} + 2\omega_5 v_1\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5 v_3^2 v_1\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8 -$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8 + \omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - \omega_5 v_3\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2\omega_5 v_1\omega_{15}\omega_{19}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 +$
$\omega_5 v_3\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} + 2\omega_5 v_3 v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - \omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20} + \omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_1\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5 v_3\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_8 - 2\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} + 2\omega_5 v_3\omega_{15}\omega_{19}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 +$
$\omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3\omega_{15}\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5 v_1\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 -$
$\omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5 v_3^2 v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8 -$
$2\omega_5 v_3\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20} + v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 -$
$2\omega_5 v_1\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5 v_3^2 v_1\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17} -$
$2\omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8 - \omega_5 v_3 v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} +$
$\omega_5 v_3^2 v_1\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - \omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3 v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8 -$
$\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 - v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_3\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17} + 2\omega_5 v_1\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20} - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8 + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_1\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8 + v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_5 v_3 v_1^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 -$
$\omega_5 v_3^2 v_1\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 - \omega_5 v_1\omega_{15}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - v_3^2 v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 +$
$\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 2\omega_5 v_3\omega_{15}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$\omega_5 v_3\omega_{15}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} - 2\omega_5 v_3^2 v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20} -$
$2v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} + 2\omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 - 2v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} - \omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 + \omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 + 2\omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2\omega_5 v_3^2 v_1\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_1\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 + 2v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - \omega_5 v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 -$
$2\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 + 2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} - 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} -$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 + 2\omega_5 v_1\omega_{15}\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - \omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 +$
$2\omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17} - 2\omega_5 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 - \omega_5 v_3\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} + 2v_3^2 v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2v_3\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17} - 2v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 -$
$2\omega_5 v_1\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5 v_3^2 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 + 2\omega_5 v_3\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 -$
$2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_3 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}$

$C_{23} = 2\omega_5 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 + v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20} - 2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} +$
$2v_3 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5 v_3 v_1\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 - 4v_3 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 -$
$2\omega_5 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17} - 2\omega_5 v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2v_1^2 v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 -$
$2\omega_5 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_8 - 2v_1^2 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} - 4\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} -$
$2\omega_5 v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 + 2\omega_5 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5 v_3 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17} +$
$4\omega_5 v_3 v_1\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 - 4\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17} +$
$2\omega_5 v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_1^2\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 - 4\omega_5 v_3 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$v_1^2 v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_1^2 v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5 v_1^2 v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 + 2\omega_5 v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} -$
$2v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + \omega_5 v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 4\omega_5 v_3 v_1 v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8 - 4\omega_5 v_3 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 +$
$4\omega_5 v_3 v_1\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2v_3 v_1 v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 + 4v_3 v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} +$

$$
2v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3v_1\omega_{15}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 -
4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8 - 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} + 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 -
2\omega_5v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -
2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17} -
2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20} + 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 -
2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5v_3v_1v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8 - 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 -
\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5v_1^2v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 - 2v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} - 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} +
2\omega_5v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20} + 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 + v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 +
2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 + 2\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 -
2\omega_5v_3v_1\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_8 -
\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 +
2\omega_5v_1^2v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} + 2\omega_5v_3v_1\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +
\omega_5v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 - \omega_5v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 -
\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8 - 4\omega_5v_3v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 -
\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 + 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} - 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17} - 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 +
2\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5v_1^2v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 + 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 +
4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8 - \omega_5v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 + 4v_3v_1v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 +
4v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} - 4\omega_5v_3v_1\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 -
2\omega_5v_3v_1v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8 +
4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - \omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20} +
4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 -
4v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17} - 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20} - 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1^2v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8 +
2\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17} - 2\omega_5v_1^2v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 -
4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} - 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 +
\omega_5v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17} -
\omega_5v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + \omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 +
2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17} + 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} + 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 -
4v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} - 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +
2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3v_1\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17} + 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 +
4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} - 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} - 2v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} +
\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 -
2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17} - \omega_5v_1^2v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8 +
\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 + 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +
2\omega_5v_3v_1v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17} + 4v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} -
2v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -
4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 - 2\omega_5v_2^2\omega_{15}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8 + 4\omega_5v_3v_1\omega_{15}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 -
\omega_5v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17} - 2\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 -
2\omega_5v_2^2\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 + 2\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 -
2\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -
\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 + 4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 - 2\omega_5v_3v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 +
2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} + 2\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_2^2\omega_{15}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 +
4\omega_5v_3v_1\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + \omega_5v_1^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5v_1^2v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 4\omega_5v_3v_1v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 -
4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} - 2v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} + 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_1^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 -
2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} - 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17} + \omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_5v_1^2v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 +
2\omega_5v_2^2\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3v_1v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_5v_3v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 -
2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 - 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +
4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 4v_3v_1\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17} + v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 -
2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - 4v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} + 2\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -
v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17} + 4\omega_5v_3v_1v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 +
2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 + 2\omega_5v_1^2v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8 + \omega_5v_1^2v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 4v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} -
2\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 + \omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_5v_2^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8
$$

$$
C_{24} = 18v_2^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 12v_2^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2 + 36\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23} -
12\omega_{16}^2\omega_{10}^3\omega_7 + 36\omega_{16}^2\omega_{10}^3\omega_7c_s^2 + 6\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_{23} + 12v_2^2\omega_{16}^2\omega_{10}^3\omega_7 - 36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7c_s^2 + 18\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 +
18v_2^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23} + 12v_2^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7 - 12v_2^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} + 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2 + 5\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2 -
12\omega_{19}\omega_{16}\omega_{10}^3\omega_7 - 12v_2^2\omega_{19}\omega_{16}\omega_{10}^3\omega_{23} - 6v_2^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + v_2^2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} - 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23}c_s^2 - 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^2 -
12v_2^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} + 6v_2^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 6\omega_{16}^2\omega_{10}^3\omega_7^2 + 54\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 -
18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 36\omega_{19}\omega_{16}\omega_{10}^3\omega_{23}c_s^2 + 12v_2^2\omega_{19}\omega_{10}^3\omega_7^2\omega_{23} + 18v_2^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 36\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - 12v_2^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} -
\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} + 12v_2^2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23} + 12v_2^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7 + 6v_2^2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2 + 54\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2 - 12v_2^2\omega_{19}\omega_{10}^3\omega_7\omega_{23} +
6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2 + 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} - 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 12v_2^2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23} - 12v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} +
36\omega_{19}\omega_{16}\omega_{10}^3\omega_7c_s^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 + 54\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2 - 6v_2^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2 - 6v_2^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2 -
12v_2^2\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} - 12v_2^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23} - 36\omega_{19}\omega_{10}^3\omega_7\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} - 12v_2^2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7 -
2v_2^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 36\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2 + 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^2 + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23} + 36\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2 -
40\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}^3\omega_7\omega_{23} - 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2 - 18\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23} - 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}
$$

$$C_{25} = 36v_2^2\omega_{19}\omega_{10}\omega_7^2\omega_{23} - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 36v_2^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 + 18v_2^2\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 36v_2^2\omega_{19}\omega_{10}^2\omega_7\omega_{23} + 18v_2^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3 +$$
$$12\omega_{19}\omega_{16}\omega_7^2\omega_{23} + 12\omega_{19}\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 36v_2^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}\omega_{10}^2\omega_7\omega_{23} -$$
$$6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3 + 12\omega_{19}\omega_{10}^2\omega_7^3 - 36v_2^2\omega_{19}\omega_{16}\omega_7^2\omega_{23} - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 - 36v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} - 12\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2 -$$
$$36v_2^2\omega_{19}\omega_{10}\omega_7^3\omega_{23} + 36v_2^2\omega_{19}\omega_{10}^2\omega_7^2 + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 4\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - 24\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}^2\omega_7^2 -$$
$$12\omega_{19}\omega_{10}\omega_7^2\omega_{23} + 18v_2^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 - 36v_2^2\omega_{19}\omega_{10}^2\omega_7^3 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 12\omega_{19}\omega_{10}\omega_7^3c_s^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2 -$$
$$24\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} - 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 6\omega_{16}\omega_{10}^2\omega_7^3c_s^2 + 36v_2^2\omega_{19}\omega_{10}^2\omega_7^3\omega_{23} + 36v_2^2\omega_{19}\omega_{10}\omega_7^3 - 12\omega_{19}\omega_{10}\omega_7^3 +$$
$$6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 + 24\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} + 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}^2\omega_7\omega_{23}c_s^2 + 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2 + 72v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} -$$
$$12\omega_{19}\omega_{10}^2\omega_7^3c_s^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_{23}c_s^2 + 36v_2^2\omega_{16}\omega_{10}^2\omega_7^2 + 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2 - 18v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3 - 72v_2^2\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} - \omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2 +$$
$$12\omega_{16}\omega_{10}^2\omega_7^2c_s^2 + 6\omega_{16}\omega_{10}^2\omega_7^3 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}^2\omega_7^2c_s^2 + 12\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 18v_2^2\omega_{16}\omega_{10}^2\omega_7^3 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^2 -$$
$$18v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 12\omega_{16}\omega_{10}^2\omega_7^2 - 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23} + 24\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2$$

$$C_{26} = -12v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{11} + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_{23} - 12\omega_{19}^2\omega_7^2\omega_{11} - 6v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{11} + 18v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23} + 12\omega_{19}^2\omega_{10}\omega_7\omega_{23} -$$
$$3v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 36\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{11} + 6v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 36\omega_{19}^2\omega_{10}\omega_7\omega_{23}c_s^2 + 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{11} - 36\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} +$$
$$12v_3^2\omega_{19}^2\omega_7^2\omega_{11} - 6\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 6v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}\omega_{11} - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} -$$
$$36\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}c_s^2 + 36\omega_{19}^2\omega_{10}\omega_7c_s^2\omega_{11} - 12v_3^2\omega_{19}^2\omega_{10}\omega_7\omega_{23} - 12v_3^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 12v_3^2\omega_{19}^2\omega_{10}\omega_7^2\omega_{11} + 5\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} +$$
$$54\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 12v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_{23} + 3\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 18\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 + 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11} + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{11} -$$
$$9\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{11} - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{11} + v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 18\omega_{19}^2\omega_{16}\omega_7^2c_s^2\omega_{11} +$$
$$18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 36\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11} + 6v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}\omega_{11} - 15\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 -$$
$$18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 12v_3^2\omega_{19}^2\omega_{10}\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{11} + 12v_3^2\omega_{19}^2\omega_{10}\omega_7\omega_{11} + 3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23} -$$
$$6\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} - 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 12v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} + 12v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{11} - 12v_3^2\omega_{19}^2\omega_7^2\omega_{23} +$$
$$36\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} + 18v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 36\omega_{19}^2\omega_7^2c_s^2\omega_{11} + 36\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11} + 6v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} +$$
$$12\omega_{19}^2\omega_7^2\omega_{23} + 12\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 36\omega_{19}^2\omega_{10}\omega_7^2c_s^2\omega_{11} - 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23} - 5v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}^2\omega_{10}\omega_7\omega_{11} - 36\omega_{19}^2\omega_7^2\omega_{23}c_s^2 -$$
$$12v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{11} + 54\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}$$

$$C_{27} = -\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 3v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 6\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11} + 12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} - 36v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} +$$
$$18\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 18v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23} - 36v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}\omega_{10}\omega_7^3\omega_{23} + 18v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 -$$
$$36v_3^2\omega_{19}\omega_{10}\omega_7^2\omega_{23} + 5\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 5\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 + 36v_3^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 12\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2 + \omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} -$$
$$36v_3^2\omega_{19}\omega_7^3\omega_{23} + 36v_3^2\omega_{19}\omega_{10}\omega_7^3\omega_{23} - 5\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 12\omega_{19}\omega_{10}\omega_7^2\omega_{23} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11} +$$
$$12\omega_{19}\omega_7^3\omega_{23} + 18v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11} - 12\omega_{19}\omega_{10}\omega_7^3c_s^2\omega_{11} - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} - 12\omega_{19}\omega_{10}\omega_7^2\omega_{11} -$$
$$18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11} - 54v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 36v_3^2\omega_{19}\omega_{10}\omega_7^3\omega_{11} - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} +$$
$$6\omega_{19}\omega_{16}\omega_7^3\omega_{11} - 15v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}\omega_7^3\omega_{11} + 12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} - 12\omega_{16}\omega_{10}\omega_7^2\omega_{11} + 36v_3^2\omega_{19}\omega_7^3\omega_{11} - 18v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{11} +$$
$$12\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{11} + 54v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 18v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{11} - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11} - 12\omega_{19}\omega_7^3\omega_{23}c_s^2 + 36v_3^2\omega_{19}\omega_{10}\omega_7^2\omega_{11} -$$
$$12\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}\omega_7^3\omega_{11} + 36v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 12\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} +$$
$$6\omega_{16}\omega_{10}\omega_7^3\omega_{11} + 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} + 12\omega_{19}\omega_7^3c_s^2\omega_{11} - 6\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11} + 18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} + 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2$$

$$C_{28} = 72v_3^2\omega_7^2 + 30v_3^2\omega_{19}\omega_7^3 - 72v_3^2\omega_{19}\omega_7^3c_s^2 - 3\omega_{19}^2\omega_7^3c_s^4 - 36v_3^2\omega_7^3 - 216v_3^2\omega_7^2c_s^2 - 6\omega_{19}\omega_7^3c_s^2 - 72v_3^2\omega_{19}\omega_7^2 + 144v_3^2\omega_{19}\omega_7^2c_s^2 + 12\omega_{19}^2\omega_7c_s^2 + 24\omega_{19}^2c_s^4 -$$
$$30v_3^4\omega_{19}\omega_7^3 + 24\omega_{19}\omega_7c_s^4 + 24\omega_{19}\omega_7^2c_s^2 + 108v_3^2\omega_7^3c_s^2 - 36v_3^2\omega_{19}^2\omega_7c_s^2 + 24\omega_{19}^2\omega_7^2c_s^4 + 72v_3^4\omega_{19}\omega_7^2 - 12v_3^2\omega_{19}^2\omega_7^2c_s^2 - 24\omega_{19}\omega_7c_s^2 + 36v_3^4\omega_7^3 - 48\omega_{19}^2\omega_7c_s^4 -$$
$$12v_3^4\omega_{19}^2\omega_7^2 - 8\omega_{19}^2\omega_7^2c_s^2 - 72v_3^4\omega_7^2 + 72v_3^2\omega_{19}\omega_7c_s^2 + 3v_3^4\omega_{19}^2\omega_7^3 - 24\omega_{19}\omega_7^2c_s^4 + 6v_3^2\omega_{19}^2\omega_7^2c_s^2 + 12v_3^2\omega_{19}^2\omega_7^2 + 6\omega_{19}\omega_7^3c_s^4 - 3v_3^2\omega_{19}^2\omega_7^3 + \omega_{19}^2\omega_7^3c_s^2$$

2.4.5 Conservation of momentum: ρv_3

$$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{v_3v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{v_3\delta_lv_2}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\delta_lv_2\rho}{\delta_t}\frac{\partial v_3}{\partial x_2} + (c_s^2+v_3^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} +$$
$$\frac{2v_3\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_6)\frac{\delta_l^2c_s^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{\delta_l^2c_s^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_7)\frac{\delta_l^2c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2+\omega_7)\frac{\delta_l^2c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3}$$
$$+ (-2-2c_s^2\omega_{11}+4c_s^2+6v_3^2+\omega_{11}-3v_3^2\omega_{11})\frac{\delta_l^2}{\delta_t\omega_{11}}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + (2-\omega_{11})\frac{3v_3\delta_l^2\rho}{\delta_t\omega_{11}}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_6)\frac{\delta_l^2c_s\rho}{2\omega_6\delta_t}\frac{\partial^2v_3}{\partial x_1^2} +$$
$$(-2+\omega_7)\frac{\delta_l^2c_s^2\rho}{2\delta_t\omega_7}\frac{\partial^2v_3}{\partial x_2^2} + (-2+\omega_6)\frac{\delta_l^2c_s^2\rho}{2\omega_6\delta_t}\frac{\partial^2v_1}{\partial x_1\partial x_3} + (-2+\omega_7)\frac{\delta_l^2c_s^2\rho}{2\delta_t\omega_7}\frac{\partial^2v_2}{\partial x_2\partial x_3} +$$
$$(-2-3c_s^2\omega_{11}+6c_s^2+2v_3^2+\omega_{11}-v_3^2\omega_{11})\frac{v_3\delta_l^2}{2\delta_t\omega_{11}}\frac{\partial^2\rho}{\partial x_3^2} + (-2-c_s^2\omega_{11}+2c_s^2+6v_3^2+\omega_{11}-3v_3^2\omega_{11})\frac{\delta_l^2\rho}{2\delta_t\omega_{11}}\frac{\partial^2v_3}{\partial x_3^2} +$$
$$(-1+v_1^2+3c_s^2)\frac{v_3v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+3v_1^2+c_s^2)\frac{v_3\delta_l^3\rho}{12\delta_t}\frac{\partial^3v_1}{\partial x_1^3} + C_1\frac{v_1\delta_l^3\rho}{6\omega_6\delta_t\omega_{13}}\frac{\partial^3v_3}{\partial x_1^3} - \frac{v_3\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3v_2}{\partial x_1^2\partial x_2} - \frac{v_3\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3v_1}{\partial x_1\partial x_2^2} +$$
$$(-1+v_2^2+3c_s^2)\frac{v_3\delta_l^3v_2}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-1+3v_2^2+c_s^2)\frac{v_3\delta_l^3\rho}{12\delta_t}\frac{\partial^3v_2}{\partial x_2^3} + C_2\frac{\delta_l^3v_2\rho}{6\delta_t\omega_{16}\omega_7}\frac{\partial^3v_3}{\partial x_2^3} + (-12+12\omega_6-\omega_6^2)\frac{\delta_l^3c_s^4}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} -$$
$$\frac{v_3\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3v_3}{\partial x_1^2\partial x_3} + (-12+12\omega_7-\omega_7^2)\frac{\delta_l^3c_s^4}{6\delta_t\omega_7^2}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} - \frac{v_3\delta_l^3c_s^2\rho}{6\delta_t}\frac{\partial^3v_3}{\partial x_2^2\partial x_3} + C_3\frac{v_3\delta_l^3\rho}{12\omega_{18}\omega_6\delta_t\omega_{11}^2}\frac{\partial^3v_1}{\partial x_1\partial x_3^2} +$$
$$C_4\frac{v_3\delta_l^3\rho}{12\omega_{19}\delta_t\omega_7\omega_{11}^2}\frac{\partial^3v_2}{\partial x_2\partial x_3^2} + C_5\frac{\delta_l^3}{12\delta_t\omega_{11}^2}\frac{\partial^3\rho}{\partial x_3^3} +$$
$$(-24-36c_s^2\omega_{11}+5c_s^2\omega_{11}^2-4\omega_{11}^2+11v_3^2\omega_{11}^2+36c_s^2+60v_3^2+24\omega_{11}-60v_3^2\omega_{11})\frac{v_3\delta_l^3\rho}{6\delta_t\omega_{11}^2}\frac{\partial^3v_3}{\partial x_3^3} +$$
$$(-3v_1^4\omega_9-12v_1^2\omega_9c_s^2+\omega_9c_s^2+6v_1^4+2c_s^4-6v_1^2-\omega_9c_s^4-2c_s^2+3v_1^2\omega_9+24v_1^2c_s^2)\frac{v_3\delta_l^4}{24\omega_9\delta_t}\frac{\partial^4\rho}{\partial x_1^4} +$$
$$(-4+2\omega_9-3\omega_9c_s^2+10v_1^2+6c_s^2-5v_1^2\omega_9)\frac{v_3v_1\delta_l^4\rho}{12\omega_9\delta_t}\frac{\partial^4v_1}{\partial x_1^4} + C_6\frac{\delta_l^4\rho}{24\omega_6^3\delta_t\omega_{13}^2}\frac{\partial^4v_3}{\partial x_1^4} +$$

$$(3\omega_9 - \omega_{12} - 9\omega_9 c_s^2 + v_1^2\omega_{12} + 3\omega_9\omega_{12}c_s^2 + 3\omega_{12}c_s^2 - 3v_1^2\omega_9 + v_1^2\omega_9\omega_{12} - \omega_9\omega_{12})\frac{v_3 v_1 \delta_l^4 \rho}{12\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^3 \partial x_2} +$$
$$(-2+\omega_5)\frac{v_3\delta_l^4 c_s^4}{6\omega_5\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_7\frac{\delta_l^4 c_s^4\rho}{2\omega_6^2\delta_t\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} +$$
$$(-\omega_{15} - \omega_{15}\omega_{10} + 3\omega_{15}c_s^2 + 3\omega_{10} - 9\omega_{10}c_s^2 - 3v_2^2\omega_{10} + v_2^2\omega_{15} + 3\omega_{15}\omega_{10}c_s^2 + v_2^2\omega_{15}\omega_{10})\frac{v_3\delta_l^4 v_2\rho}{12\omega_{15}\delta_t\omega_{10}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$(-12v_2^2\omega_{10}c_s^2 - 3v_2^4\omega_{10} - \omega_{10}c_s^4 + 6v_2^4 + 2c_s^4 + \omega_{10}c_s^2 + 24v_2^2c_s^2 + 3v_2^2\omega_{10} - 6v_2^2 - 2c_s^2)\frac{v_3\delta_l^4}{24\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_2^4} +$$
$$(-4 + 2\omega_{10} - 3\omega_{10}c_s^2 - 5v_2^2\omega_{10} + 10v_2^2 + 6c_s^2)\frac{v_3\delta_l^4 v_2\rho}{12\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^4} + C_8\frac{\delta_l^4\rho}{24\delta_t\omega_{16}^2\omega_7^3}\frac{\partial^4 v_3}{\partial x_2^4} + C_9\frac{v_1\delta_l^4 c_s^2}{12\omega_{18}\omega_9\omega_6^2\omega_{22}\delta_t\omega_{13}^2\omega_{11}}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} +$$
$$C_{10}\frac{\delta_l^4 c_s^2\rho}{12\omega_{18}\omega_9\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} +$$
$$(3\omega_9 - 9\omega_9c_s^2 + v_1^2\omega_9\omega_{13} - \omega_9\omega_{13} - \omega_{13} - 3v_1^2\omega_9 + 3\omega_9\omega_{13}c_s^2 + 3\omega_{13}c_s^2 + v_1^2\omega_{13})\frac{v_3 v_1\delta_l^4\rho}{12\omega_9\delta_t\omega_{13}}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$C_{11}\frac{\delta_l^4}{2\omega_{18}\omega_6\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{12}\frac{\delta_l^4\rho}{2\omega_{18}\omega_6\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{13}\frac{\delta_l^4\rho}{12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C_{14}\frac{v_3\delta_l^4\rho}{\omega_{18}\omega_6\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{15}\frac{\delta_l^4}{2\omega_{18}\omega_6\omega_{19}\delta_t\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{16}\frac{\delta_l^4\rho}{12\omega_5\omega_{18}\omega_6^2\omega_{19}\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{17}\frac{\delta_l^4 v_2\rho}{\omega_{18}\omega_6\omega_{19}\delta_t\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C_{18}\frac{\delta_l^4\rho}{2\omega_{18}\omega_6\omega_{19}\delta_t\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{19}\frac{\delta_l^4 v_2 c_s^2}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{20}\frac{\delta_l^4 c_s^2\rho}{12\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} +$$
$$(v_2^2\omega_{16}\omega_{10} + 3\omega_{16}\omega_{10}c_s^2 - \omega_{16} + 3\omega_{10} + v_2^2\omega_{16} - 9\omega_{10}c_s^2 - 3v_2^2\omega_{10} + 3\omega_{16}c_s^2 - \omega_{16}\omega_{10})\frac{v_3\delta_l^4 v_2\rho}{12\delta_t\omega_{16}\omega_{10}}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$C_{21}\frac{v_3\delta_l^4 c_s^2}{12\omega_{18}^2\omega_6^2\omega_{22}\delta_t\omega_{13}\omega_{11}^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{22}\frac{\delta_l^4 c_s^2\rho}{12\omega_{18}\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{23}\frac{v_3\delta_l^4 c_s^2}{12\omega_{19}^2\delta_t\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} +$$
$$C_{24}\frac{\delta_l^4 c_s^2\rho}{12\omega_{19}\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{25}\frac{\delta_l^4\rho}{12\omega_{18}^2\omega_6^3\delta_t\omega_{11}^3}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{26}\frac{\delta_l^4\rho}{12\omega_{19}^2\delta_t\omega_7^3\omega_{11}^3}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{27}\frac{v_3\delta_l^4}{12\delta_t\omega_{11}^3}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$C_{28}\frac{\delta_l^4\rho}{12\delta_t\omega_{11}^3}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

$$C_1 = 6 - 3\omega_6 - 3\omega_6\omega_{13}c_s^2 + 3v_1^2\omega_6 + 9\omega_6c_s^2 - 6v_1^2 - 3\omega_{13} - 18c_s^2 + \omega_6\omega_{13} - v_1^2\omega_6\omega_{13} + 9\omega_{13}c_s^2 + 3v_1^2\omega_{13}$$

$$C_2 = 6 - v_2^2\omega_{16}\omega_7 - 3\omega_{16}\omega_7c_s^2 - 3\omega_{16} + 3v_2^2\omega_{16} + \omega_{16}\omega_7 - 3\omega_7 - 6v_2^2 - 18c_s^2 + 9\omega_{16}c_s^2 + 3v_2^2\omega_7 + 9\omega_7c_s^2$$

$$C_3 = -18\omega_{18}\omega_6c_s^2\omega_{11} + 12\omega_6\omega_{11} - 12v_3^2\omega_6\omega_{11} + 36\omega_{18}\omega_6c_s^2 + 12v_3^2\omega_6\omega_{11}^2 - 36c_s^2\omega_{11}^2 - 12\omega_6\omega_{11}^2 - 11\omega_{18}\omega_6c_s^2\omega_{11}^2 + 12\omega_{11}^2 - 12v_3^2\omega_{11}^2 - 36\omega_6c_s^2\omega_{11} + 3\omega_{18}\omega_6\omega_{11}^2 + 18\omega_{18}c_s^2\omega_{11}^2 + 12v_3^2\omega_{18}\omega_6 - 3v_3^2\omega_{18}\omega_6\omega_{11}^2 - 12\omega_{18}\omega_6 - 6v_3^2\omega_{18}\omega_6\omega_{11} - 6\omega_{18}\omega_{11}^2 + 36\omega_6c_s^2\omega_{11}^2 + 6\omega_{18}\omega_6\omega_{11} + 6v_3^2\omega_{18}\omega_{11}^2$$

$$C_4 = -6v_3^2\omega_{19}\omega_7\omega_{11} + 12v_3^2\omega_7\omega_{11}^2 - 36\omega_7c_s^2\omega_{11} + 18\omega_{19}c_s^2\omega_{11}^2 - 12\omega_7\omega_{11}^2 + 6\omega_{19}\omega_7\omega_{11} + 12v_3^2\omega_{19}\omega_7 + 3\omega_{19}\omega_7\omega_{11}^2 - 36c_s^2\omega_{11}^2 - 12\omega_{19}\omega_7 + 36\omega_7c_s^2\omega_{11}^2 + 12\omega_7\omega_{11} + 12\omega_{11}^2 - 12v_3^2\omega_7\omega_{11} - 3v_3^2\omega_{19}\omega_7\omega_{11}^2 - 12v_3^2\omega_{11}^2 + 36\omega_{19}\omega_7c_s^2 - 18\omega_{19}\omega_7c_s^2\omega_{11} - 6\omega_{19}\omega_{11}^2 + 6v_3^2\omega_{19}\omega_{11}^2 - 11\omega_{19}\omega_7c_s^2\omega_{11}^2$$

$$C_5 = 36v_3^4 + 7v_3^4\omega_{11}^2 + 12c_s^2\omega_{11} - 144v_3^2c_s^2\omega_{11} + 24v_3^2c_s^2\omega_{11}^2 + 144v_3^2c_s^2 - 36v_3^4\omega_{11} - c_s^2\omega_{11}^2 + 12c_s^4 - 12c_s^4\omega_{11} - 7v_3^2\omega_{11}^2 - 12c_s^2 - 36v_3^2 + c_s^4\omega_{11}^2 + 36v_3^2\omega_{11}$$

$$C_6 = 30v_1^2\omega_6^3\omega_{13} - 36v_1^2\omega_6^3 - 3\omega_6^3\omega_{13}^2c_s^4 + 72v_1^4\omega_6^2\omega_{13} - 6\omega_6^3\omega_{13}c_s^2 + 12v_1^2\omega_6^2\omega_{13}^2 + 72v_1^2\omega_6^2 - 72v_1^2\omega_6^3\omega_{13}c_s^2 + 108v_1^2\omega_6^3c_s^2 + 3v_1^4\omega_6^3\omega_{13}^2 - 24\omega_6^2\omega_{13}c_s^4 - 30v_1^4\omega_6^3\omega_{13} + 72v_1^2\omega_6\omega_{13}c_s^2 - 24\omega_6\omega_{13}c_s^2 - 72v_1^2\omega_6^2\omega_{13} - 12v_1^2\omega_6^2\omega_{13}^2c_s^2 - 12v_1^4\omega_6^2\omega_{13}^2 - 216v_1^2\omega_6^2c_s^2 - 48\omega_6\omega_{13}^2c_s^4 - 8\omega_6^2\omega_{13}^2c_s^2 - 3v_1^2\omega_6^3\omega_{13}^2 + 144v_1^2\omega_6^2\omega_{13}c_s^2 + 24\omega_6\omega_{13}c_s^4 - 72v_1^4\omega_6^2 + 24\omega_6^2\omega_{13}c_s^2 + 36v_1^4\omega_6^3 + 24\omega_6^2\omega_{13}^2c_s^4 - 36v_1^2\omega_6\omega_{13}^2c_s^2 + 12\omega_6\omega_{13}^2c_s^2 + \omega_6^3\omega_{13}^2c_s^2 + 6v_1^2\omega_6^3\omega_{13}^2c_s^2 + 24\omega_{13}^2c_s^4 + 6\omega_6^3\omega_{13}c_s^4$$

$$C_7 = \omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8 + 2\omega_6\omega_{16}\omega_7\omega_{17}\omega_{14}\omega_8 - 2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{14} + \omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8 + \omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 - 2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17} - \omega_6\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 - \omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14} + \omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 + \omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_8 - \omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 - \omega_6^2\omega_{16}\omega_7\omega_{17}\omega_{14}\omega_8 - 2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17} + \omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17} - 2\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8 - 2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14} + 2\omega_6\omega_{16}\omega_{13}\omega_{17}\omega_{14}\omega_8 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{14}\omega_8 - \omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8 + 2\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 - \omega_6^2\omega_{16}\omega_{13}\omega_{17}\omega_{14}\omega_8 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{14} + 2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14} + 2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8 - 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8 + 2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 - 6\omega_6\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 - 2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{14}$$

$$C_8 = -48\omega_{16}^2\omega_7c_s^4 - 12v_2^2\omega_{16}^2\omega_7^2c_s^2 - 24\omega_{16}\omega_7c_s^2 - 30v_2^4\omega_{16}\omega_7^3 + 72v_2^2\omega_{16}\omega_7c_s^2 - 24\omega_{16}\omega_7^2c_s^4 - 8\omega_{16}^2\omega_7^2c_s^2 + 72v_2^4\omega_{16}\omega_7^2 + 36v_2^4\omega_7^3 + 6v_2^2\omega_{16}^2\omega_7^3c_s^2 + 30v_2^2\omega_{16}\omega_7^3 + \omega_{16}^2\omega_7^3c_s^2 - 72v_2^4\omega_7^2 - 72v_2^2\omega_{16}\omega_7^2 + 6\omega_{16}\omega_7^3c_s^4 + 24\omega_{16}^2c_s^4 - 72v_2^2\omega_{16}\omega_7^3c_s^2 + 12v_2^2\omega_{16}^2\omega_7^2 - 6\omega_{16}\omega_7^3c_s^2 - 3\omega_{16}^2\omega_7^3c_s^4 - 3v_2^2\omega_{16}^2\omega_7^3 - 216v_2^2\omega_7^2c_s^2 + 24\omega_{16}\omega_7c_s^4 + 144v_2^2\omega_{16}\omega_7^2c_s^2 + 72v_2^2\omega_7^2 - 12v_2^4\omega_{16}^2\omega_7^2 + 12\omega_{16}^2\omega_7c_s^2 + 108v_2^2\omega_7^3c_s^2 - 36v_2^2\omega_7^3 - 36v_2^2\omega_{16}^2\omega_7c_s^2 + 24\omega_{16}^2\omega_7^2c_s^4 + 24\omega_{16}\omega_7^2c_s^2 + 3v_2^4\omega_{16}^2\omega_7^3$$

$$C_9 = -36\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11} + 12\omega_{18}\omega_{22}\omega_{13}^2\omega_{11} - 12\omega_9\omega_6^2\omega_{13}^2 + 3\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}\omega_{11} - 15\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11} + 18v_1^2\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}\omega_{11} + 6v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{11} + 12v_1^2\omega_9\omega_6^2\omega_{13}^2 - 12v_1^2\omega_{18}\omega_9\omega_6\omega_{13}^2\omega_{11} + 3\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11} - 5v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2\omega_{11} + 36\omega_9\omega_6^2\omega_{13}^2c_s^2 - 18\omega_{18}\omega_9\omega_6^2\omega_{13}c_s^2\omega_{11} + 12\omega_{18}\omega_9\omega_{22}\omega_{13}\omega_{11} - 12v_1^2\omega_{18}\omega_{22}\omega_{13}^2\omega_{11} - 36\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11} - 6v_1^2\omega_{18}\omega_9\omega_6^2\omega_{13}\omega_{11} + 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11} -$$

$18\omega_{18}\omega_9\omega_6^2\omega_{13}^2c_s^2 + 54\omega_{18}\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11} - 12\omega_9\omega_6\omega_{13}^2\omega_{11} + 36\omega_9\omega_6\omega_{13}^2c_s^2\omega_{11} - 6\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{11} + 36\omega_{18}\omega_9\omega_{22}\omega_{13}^2c_s^2\omega_{11} +$
$12\omega_{18}\omega_9\omega_6\omega_{13}^2\omega_{11} + 6v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 + 12v_1^2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11} + 12v_1^2\omega_9\omega_6\omega_{13}^2\omega_{11} + 5\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2\omega_{11} + 18\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2\omega_{11} -$
$12v_1^2\omega_{18}\omega_9\omega_{22}\omega_{13}\omega_{11} + v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2\omega_{11} + 12\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}^2\omega_{11} - 36\omega_{18}\omega_9\omega_6\omega_{13}^2c_s^2\omega_{11} + 6\omega_{18}\omega_9\omega_6^2\omega_{13}\omega_{11} - 6\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 -$
$12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11} + 6\omega_{18}\omega_9\omega_6^2\omega_{13}^2 - 3v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}\omega_{11} + 12\omega_9\omega_6^2\omega_{13}^2\omega_{11} + 12v_1^2\omega_{18}\omega_9\omega_{22}\omega_{13}^2\omega_{11} - 6\omega_{18}\omega_9\omega_6^2\omega_{13}^2\omega_{11} -$
$18\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}\omega_{11} + 12\omega_{18}\omega_9\omega_6\omega_{22}\omega_{11} - 36\omega_{18}\omega_9\omega_{22}\omega_{13}c_s^2\omega_{11} - 6v_1^2\omega_{18}\omega_9\omega_6^2\omega_{13}^2 - 12v_1^2\omega_9\omega_6^2\omega_{13}^2\omega_{11} + 18v_1^2\omega_{18}\omega_6\omega_{22}\omega_{13}^2\omega_{11} -$
$12\omega_{18}\omega_9\omega_6\omega_{13}\omega_{11} + 36\omega_{18}\omega_9\omega_6\omega_{13}c_s^2\omega_{11} - 12v_1^2\omega_6\omega_{22}\omega_{13}^2\omega_{11} + 18\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2c_s^2 - 12\omega_{18}\omega_9\omega_{22}\omega_{13}^2\omega_{11} - 36\omega_9\omega_6^2\omega_{13}^2c_s^2\omega_{11} -$
$9\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11} + 6v_1^2\omega_{18}\omega_9\omega_6^2\omega_{13}^2\omega_{11} - 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2 - 12v_1^2\omega_{18}\omega_9\omega_6\omega_{22}\omega_{11} - 36\omega_{18}\omega_{22}\omega_{13}^2c_s^2\omega_{11} + 54\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11} -$
$12v_1^2\omega_6^2\omega_{22}\omega_{13}^2 + 12\omega_6\omega_{22}\omega_{13}^2\omega_{11} + 18\omega_{18}\omega_9\omega_6^2\omega_{13}^2c_s^2\omega_{11} - \omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2\omega_{11} + 12\omega_6^2\omega_{22}\omega_{13}^2 - 12v_1^2\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}^2\omega_{11} +$
$12v_1^2\omega_{18}\omega_9\omega_6\omega_{13}\omega_{11} - 18\omega_{18}\omega_6\omega_{22}\omega_{13}^2\omega_{11} - 36\omega_{18}\omega_9\omega_6\omega_{22}c_s^2\omega_{11}$

$C_{10} = -\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11} + 6\omega_{18}\omega_9\omega_6^3\omega_{22}c_s^2\omega_{11} + \omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}\omega_{11} - 18v_1^2\omega_{18}\omega_9\omega_6^3\omega_{11} - 54v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{11} -$
$5\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11} + 12\omega_{18}\omega_9\omega_6^2c_s^2\omega_{11} + 12\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_{11} + 12\omega_9\omega_6^2\omega_{13}c_s^2\omega_{11} + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11} - 12\omega_9\omega_6^3\omega_{13} -$
$12\omega_{18}\omega_9\omega_6^2\omega_{13}c_s^2\omega_{11} - 36v_1^2\omega_6^3\omega_{22}\omega_{13} + 6\omega_{18}\omega_9\omega_6^3\omega_{11} + 36v_1^2\omega_9\omega_6^3\omega_{13} - 36v_1^2\omega_{18}\omega_9\omega_6^2\omega_{13}\omega_{11} + 12\omega_6^3\omega_{22}\omega_{13} + 6\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2 +$
$36v_1^2\omega_{18}\omega_9\omega_6^2\omega_{11} + 36v_1^2\omega_9\omega_6^2\omega_{13}\omega_{11} + 6\omega_{18}\omega_9\omega_6^3\omega_{13}c_s^2\omega_{11} + 18\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{11} - 12\omega_6^3\omega_{22}\omega_{13}c_s^2 - 36v_1^2\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_{11} -$
$18\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2\omega_{11} - 6\omega_{18}\omega_9\omega_6^3\omega_{13}c_s^2 - 12\omega_9\omega_6^2\omega_{13}\omega_{11} - 12\omega_{18}\omega_9\omega_6^2\omega_{11} - 12\omega_9\omega_6^3\omega_{13}c_s^2\omega_{11} + 12\omega_9\omega_6^3\omega_{13}c_s^2 + 12\omega_{18}\omega_9\omega_6^2\omega_{13}\omega_{11} +$
$18v_1^2\omega_{18}\omega_9\omega_6^3\omega_{13}\omega_{11} - 18\omega_{18}\omega_6^2\omega_{22}\omega_{13}\omega_{11} - 3v_1^2\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}\omega_{11} - 18v_1^2\omega_{18}\omega_9\omega_6^3\omega_{13} + 18v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13} + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11} -$
$12\omega_{18}\omega_9\omega_6\omega_{22}\omega_{11} - 12\omega_{18}\omega_9\omega_{22}\omega_{13}c_s^2\omega_{11} + 18v_1^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{11} - 15v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_{11} - 6\omega_{18}\omega_9\omega_6^3c_s^2\omega_{11} + 6\omega_{18}\omega_9\omega_6^3\omega_{13} -$
$36v_1^2\omega_6^2\omega_{22}\omega_{13}\omega_{11} - 6\omega_{18}\omega_6^3\omega_{22}\omega_{13} - 6\omega_{18}\omega_9\omega_6^3\omega_{13}\omega_{11} + 18\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11} + 54v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{13}\omega_{11} - 5\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11} +$
$36v_1^2\omega_6^3\omega_{22}\omega_{13}\omega_{11} + 36v_1^2\omega_{18}\omega_9\omega_6\omega_{22}\omega_{11} + 12\omega_9\omega_6^3\omega_{13}\omega_{11} - 6\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{11} + 18\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11} + 5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_{11} -$
$12\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11} - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11} - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11} - 36v_1^2\omega_9\omega_6^3\omega_{13}\omega_{11} + 12\omega_{18}\omega_9\omega_6\omega_{22}c_s^2\omega_{11}$

$C_{11} = -2v_3^2v_1v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 - v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} - 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} + v_3^2\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} - v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 +$
$2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 - v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} -$
$2v_3^2v_1^2v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14} - 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_1^2v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8 - v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 +$
$v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 -$
$2v_3^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 +$
$v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8 + 2v_1^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} - 2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 +$
$v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14} -$
$2v_3^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} - 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} - v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 - 2v_3^2v_1v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 -$
$v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_3^2v_1v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 + v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} -$
$2v_1^2v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} - 2v_3^2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} - 2v_1v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} - 2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} +$
$2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} + 2v_1^2\omega_{18}v_2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1^2v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2v_3^2v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$2v_1^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} + 2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} -$
$v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_3^2v_1v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 - v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 +$
$2v_3^2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} -$
$2v_3^2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} + v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_1v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8 +$
$v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 - v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1^2v_2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_3^2\omega_{18}v_2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11} - v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 - 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 +$
$v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 + 2v_1^2v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 -$
$v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 -$
$v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14} -$
$2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} + v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_1v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}v_2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11} - 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} - 2v_1v_2^2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 +$
$v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14} +$
$2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14} + v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 -$
$v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11} +$
$v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$

$v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1^2\omega_{18}v_2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1^2\omega_{18}v_2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 - v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14} - 2v_3^2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} + 2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 +$
$v_1^2\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1^2v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11} + 2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_{18}\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1^2v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2v_3^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$v_3^2\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 -$
$2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} + 2v_3^2v_1v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2v_1v_2^2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14} - 2v_1^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2v_3^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_3^2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 +$
$2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11} - 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14} + 2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 + v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14} + 2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} -$
$2v_3^2v_1\omega_{18}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 - 2v_1^2v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 -$
$v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} - v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 + v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 - v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8 - v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} +$
$2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} - 2v_1^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} - v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 + v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 - v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8 - v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} +$
$2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} - 2v_1^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14} - 2v_3^2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} - 2v_3^2v_1^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} -$
$2v_1v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} +$
$v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_3^2v_2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 -$
$2v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} - v_1^2\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - v_3^2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8 +$
$v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_3^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_1v_2^2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 -$
$2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14} - v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$2v_3^2v_1v_2^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} + v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 - v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} +$
$v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} + 2v_3^2v_1^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 +$
$2v_1^2v_2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} + 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 +$
$v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} - 2v_3^2v_1\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 + 2v_3^2v_1^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8$

$C_{12} = -v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_3^2v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} - 2v_3^2v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} + 2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 +$
$2v_2^2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - \omega_{18}v_2^2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 -$
$4v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 - 4v_1v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 +$
$4v_1v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2v_1\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} - 2v_2^2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} + 2v_3^2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4v_1\omega_{18}v_2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 4v_3^2v_1v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$4v_3^2v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - v_3^2\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 4v_1v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2v_1\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11} - 2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 - v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 - 2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 - 4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} +$
$2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_3^2\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 - 4v_1v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_3^2v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} -$
$2v_3^2\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14} - 2v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 - 2v_3^2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 +$
$2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} + 4v_1v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + v_3^2\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2\omega_{18}v_2^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} - 2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 - v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11} + \omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8 -$
$4v_3^2v_1v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14} + 4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14} - 2v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 +$
$2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} - \omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + 4v_1v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$
$4v_3^2v_1v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11} + 2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14} - 2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 - 2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$
$\omega_{18}v_2^2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4v_3^2v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$

$4v_3^2v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 - \omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_3^2v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 + 4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 + 4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 - 2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} + 2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14} + 4v_3^2v_1v_2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$4v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_{18}v_2^2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4v_3^2v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} -$
$2v_3^2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} + \omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 -$
$4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} - 2v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$
$4v_1v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 4v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} -$
$4v_1\omega_{18}v_2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} - v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 -$
$4v_1v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_3^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_3^2\omega_{18}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2\omega_{18}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8 + 2v_2^2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 -$
$2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + v_3^2\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8 - v_3^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$4v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} + 2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8 - 4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} + \omega_{18}v_2^2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2v_3^2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} + 2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} + 4v_3^2v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} -$
$4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 + v_3^2\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 4v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 -$
$4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14} - 4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 4v_3^2v_1v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 -$
$2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 +$
$2v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{18}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14} + 4v_3^2v_1\omega_{18}v_2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14} + 2v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} -$
$v_3^2\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14} + v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 4v_1v_2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} +$
$2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 - 4v_3^2v_1v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2v_3^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8 -$
$\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11} + 4v_3^2v_1v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 +$
$2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + 4v_3^2v_1v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2v_3^2v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$4v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} + 2v_3^2\omega_{18}\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 4v_3^2v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 -$
$4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} + 2v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14} + 2v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2v_2^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} +$
$2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 - 4v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 - 4v_3^2v_1\omega_{18}v_2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$4v_3^2v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} + 4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 + 4v_3^2v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 - 2v_3^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8 +$
$\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 + v_3^2\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4v_3^2v_1v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 + 4v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11} +$
$2v_3^2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$
$v_3^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2v_3^2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} +$
$2v_3^2v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 4v_1\omega_{18}v_2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{18}v_2^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} +$
$2v_1\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} - 2v_3^2\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 - v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8$

$C_{13} = -12\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8 - 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 6\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11} + 12\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 - 6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 +$
$24\omega_5v_1v_2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 24\omega_5v_3^2v_1v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8 - 12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} +$
$12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8 - 6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8 +$
$6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11} - 12\omega_5v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 +$
$24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 + 12\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11} - 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8 - 12\omega_5v_3^2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$12\omega_5v_3^2v_1^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8 + 24\omega_5v_3^2v_1v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 - 6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 -$
$24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8 + 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14} - 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$12\omega_5v_1^2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} + 12\omega_5v_3^2v_1^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8 -$
$6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} - 24\omega_5v_3^2v_1v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$12\omega_5v_3^2v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14} + 12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8 - 24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 + 24\omega_5v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$12\omega_5v_1^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 -$
$24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14} + 12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8 - 24\omega_5v_1\omega_{18}v_2\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 + 12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 10\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1^2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} +$
$12\omega_5v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 + 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_3^2v_1^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 -$
$12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8 + 12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14} - 12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{11}\omega_{14}\omega_8 +$
$6\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8 -$
$12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14} - 24\omega_5v_3^2v_1v_2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 +$
$12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14} + 24\omega_5v_3^2v_1v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8 - 6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8 - 24\omega_5v_3^2v_1v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} -$

$$12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11} + 24\omega_5v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 + 6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$24\omega_5v_1\omega_{18}v_2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_1^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8 -$$
$$6\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8 - 18\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 - 6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 -$$
$$18\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 +$$
$$6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} - 12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8 -$$
$$6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11} - 12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 - 24\omega_5v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_1^2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 24\omega_5v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14} + 12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 -$$
$$12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14} + 12\omega_5v_3^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8 + 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$24\omega_5v_3^2v_1v_2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} -$$
$$24\omega_5v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11} - 24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8 + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$18\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 - \omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 - 6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 +$$
$$12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14} - 12\omega_5v_3^2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 +$$
$$24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8 + 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11} - 24\omega_5v_1v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 +$$
$$12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14} + 12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8 +$$
$$12\omega_5v_3^2v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 - 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8 + 6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14} + 6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 + 12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 +$$
$$6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11} -$$
$$12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8 - 6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_3^2v_1^2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$24\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 + 6\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_8 + 12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 +$$
$$24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 24\omega_5v_1v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8 -$$
$$6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14} + 12\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8 -$$
$$12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11} - 12\omega_5v_1^2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8 - 6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 -$$
$$6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_3^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 - 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 -$$
$$12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14} - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14} - 6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$24\omega_5v_3^2v_1v_2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11} -$$
$$12\omega_5v_1^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 + 24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8 - 12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14} + 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14} -$$
$$12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 + 12\omega_5v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11} - 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$$
$$6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8 -$$
$$24\omega_5v_1v_2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 + 24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 + 24\omega_5v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 -$$
$$12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8 + 6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14} + 12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 -$$
$$12\omega_5v_1^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_3^2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 + 24\omega_5v_1v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 24\omega_5v_3^2v_1v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_1^2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 -$$
$$12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{11}\omega_{14} - 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} + 12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 +$$
$$12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1^2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11} - 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$6\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8 + 6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 24\omega_5v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14} -$$
$$12\omega_5v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 + 12\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$12\omega_5v_3^2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$24\omega_5v_1v_2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} -$$
$$12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14} +$$
$$12\omega_5v_1^2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14} + 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$12\omega_5v_3^2v_1^2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8 - 12\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 -$$
$$6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 - 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_5v_1^2\omega_{18}\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8 - 24\omega_5\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 - 6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$12\omega_5v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 + 12\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} - 12\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$12\omega_5v_3^2v_1^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8 + 6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 - 24\omega_5v_1v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11} + 12\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8 + 24\omega_5v_1v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 +$$
$$24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14} + 6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 6\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$6\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} - 24\omega_5v_3^2v_1v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8 -$$
$$24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14} + 12\omega_5v_1^2\omega_{18}\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8 -$$
$$12\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14} - 12\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8 - 24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14} +$$
$$12\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14} - 6\omega_5v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 - 24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8 +$$
$$12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2v_1^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8 -$$
$$12\omega_5v_3^2v_1^2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 24\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14} - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11} + 12\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8 -$$
$$24\omega_5v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 - 12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8 - 6\omega_5v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$24\omega_5v_3^2v_1\omega_{18}v_2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14} - 12\omega_5v_1\omega_{18}v_2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 24\omega_5v_1v_2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8 -$$

$12\omega_5 v_3^2 v_1^2 \omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14} + 12\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^4\omega_{20}\omega_{11}\omega_8$

$C_{14} = -2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 - v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14} -$
$2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8 - v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8 - v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 + \omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} - 2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14} +$
$2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14} + v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 -$
$2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14} - 2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14} + 2v_1 v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14} + v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8 -$
$2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2 v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14} -$
$2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} - v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_1^2\omega_{18}v_2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8 - 2v_1\omega_{18}\omega_{22}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8 +$
$2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + \omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_2\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + v_1\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2v_1 v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 2v_1 v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11} - 2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} + 2v_1^2 v_2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} + 2v_2\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8 + 2v_1 v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8 - 2\omega_{18}v_2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_1\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1 v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14} - 2v_2\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 - 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11} - 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} -$
$v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2 v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$v_1^2\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14} + 2v_1\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} +$
$2\omega_{18}v_2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 - \omega_{18}v_2\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 -$
$\omega_{18}v_2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11} - 2v_1\omega_{18}v_2^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 + 2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 + 2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11} + 2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 +$
$v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 + 2v_1^2 v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11} + 2v_1^2 v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$
$v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8 + 2v_1\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 - 2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14} - 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14} -$
$v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14} - 2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14} + 2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14} -$
$\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_1^2\omega_{18}v_2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1 v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} + 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} + v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 -$
$2v_1^2\omega_{18}v_2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 -$
$2v_1\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_{18}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1^2 v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 +$
$2\omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11} - \omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8 - 2v_2\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$2v_1\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8 - \omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_1^2 v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8 - 2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8 - 2v_1\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14} -$
$2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8 + 2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8 - v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2v_1\omega_{18}v_2^2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14} -$
$v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1^2 v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 + v_1\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 -$
$2v_1\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 + \omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14} -$
$v_1\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2 v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$
$v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 + \omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8 + v_1\omega_{18}\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_1 v_2^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8 + v_1\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8 +$
$v_1^2\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8 - 2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11} + v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11} + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} -$
$v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2v_1^2 v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$
$v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 + \omega_{18}v_2\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8 + v_1\omega_{18}\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 + \omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - 2v_1 v_2^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2v_1\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$v_1\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 - \omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8 + v_1\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_{18}v_2\omega_{22}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8 +$
$v_1^2\omega_{18}v_2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8 - 2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11} + v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$
$2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 + 2v_1^2\omega_{18}v_2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14} + 2\omega_{18}v_2\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11} + v_1\omega_{18}v_2^2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8$

$C_{15} = -v_3\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3^2 v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 +$
$2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_3 v_1^2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} - v_3^2 v_1 v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} - 2v_3^2 v_1\omega_{18}\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3 v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 +$
$2v_3 v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3^2 v_1 v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 2v_3 v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_3 v_1^2\omega_{18}\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3 v_1^2\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3 v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3^2 v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 -$
$2v_3^2 v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 - 2v_3^2 v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} + 2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3 v_1^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 2v_3 v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} + 2v_3 v_1^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 -$
$2v_3^2 v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + v_3 v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3 v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$2v_3 v_1^2\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + v_3^2 v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_1 v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3 v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 +$
$2v_3 v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2v_3 v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} + 2v_3^2 v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} -$
$v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_3 v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2v_1 v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_3 v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11} - v_3^2 v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 -$
$2v_3^2 v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3 v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3 v_1^2\omega_{18}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$

$v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_3v_1^2\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + v_3\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 -$
$v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11} + v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 + v_3^2v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3v_1^2\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + v_3^2v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11} -$
$2v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} + 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11} -$
$2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 2v_3^2v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3^2v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_3\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2v_3\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11} + 2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} + v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} - 2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11} + 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 +$
$v_3^2v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + v_3^2v_1\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 - 2v_3\omega_{18}v_2^2\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} + 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 +$
$v_3v_1^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{18}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3^2v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} + 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 -$
$2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_3\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} +$
$2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 +$
$v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 + v_3v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 +$
$2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_3^2v_1\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 +$
$2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} + v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 + v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 +$
$2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11} - v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} +$
$v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$2v_1\omega_{18}v_2^2\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} +$
$v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} -$
$v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3^2v_1\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$v_3v_1^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11} -$
$2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8 + 2v_3v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} +$
$2v_3^2v_1\omega_{18}\omega_6\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 -$
$2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} + 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} +$
$2v_3v_1^2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + v_3v_1^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_3^2v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 - v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 - v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} -$
$2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 + 2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} +$
$2v_3v_1^2\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3^2v_1\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3v_1^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11} +$
$v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$2v_3^2v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} - 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 +$
$v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 - 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{11}\omega_8 + 2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3\omega_{18}v_2^2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11} + v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} +$
$2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_3^2v_1v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - v_1v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$v_3v_1^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 + v_3v_1^2v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 -$
$2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - v_3v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$2v_3\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$v_3v_1^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 +$
$2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - v_3v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$2v_3\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$v_3v_1^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 -$
$2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} + 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11} +$
$2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} - 2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2v_3v_1^2\omega_{18}\omega_6\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11} -$

$2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3\omega_{18}v_2^2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} + 2v_3^2v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + v_3v_1^2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11} -$
$2v_3\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} + 2v_3v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8$

$C_{16} = 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11} - 6\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8 - 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8 + 24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 6\omega_5v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 +$
$12\omega_{18}\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 6\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$6\omega_5\omega_{18}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 12\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8 +$
$12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11} + 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 +$
$6\omega_5v_3^2v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11} - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 +$
$12\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8 - 2\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 - 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8 +$
$24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8 - 6\omega_5v_3^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8 + 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3v_1\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 + 12\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} +$
$12\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11} - 6\omega_5v_3^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11} - 6\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5v_3^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8 + 24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 + 10\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 +$
$12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11} + 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 24\omega_5v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11} -$
$24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3v_1v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8 + 6\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8 + 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8 - \omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11} + 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11} + 12\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8 +$
$6\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11} + 6\omega_5v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$18\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 - 6\omega_5v_3^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8 - 24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 12\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_{11} +$
$12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11} - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 24\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11} - 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 6\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8 -$
$12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 - 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11} + 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 +$
$12\omega_5v_3^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 - 18\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$6\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 + 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$24\omega_5v_3v_1v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8 + 12\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11} + 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$24\omega_5v_3v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$6\omega_5v_3^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8 + 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$12\omega_5\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11} + 24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 + 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3v_1\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 + 6\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$12\omega_5\omega_{18}\omega_6\omega_{19}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 - 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$18\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 + 24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 6\omega_5\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 -$
$12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3v_1\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 12\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11} + 6\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11} +$
$12\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11} - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11} -$
$24\omega_5v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11} + 12\omega_5v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 +$
$12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11} - 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 24\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 - 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 -$
$24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3v_1\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8 + 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8 +$
$12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 -$
$6\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 6\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8 + 6\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$6\omega_5v_3^2v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 + 6\omega_5\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_5v_3^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} + 12\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8 + 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8 + 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11} + 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11} - 12\omega_5v_3^2\omega_{18}\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 - 6\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$24\omega_5v_3v_1\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11} - 12\omega_5v_3^2\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11} + 12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$12\omega_5\omega_{18}v_2^2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 6\omega_5v_3^2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 6\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8 -$

$12\omega_5 v_3 v_1 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 12\omega_5 \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8 + 12\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} +$
$12\omega_{18} \omega_6^2 \omega_{16} \omega_7^2 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 12\omega_5 v_3^2 \omega_{18} v_2^2 \omega_6^2 \omega_{16} \omega_7^3 \omega_{23} \omega_{17} \omega_8 + 12\omega_5 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_7^2 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 -$
$6\omega_5 \omega_{18} \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 12\omega_5 v_3 v_1 v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{20} \omega_{17} \omega_8 + 12\omega_5 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8 -$
$12\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{20} \omega_{17} \omega_8 - 12\omega_5 \omega_{18} v_2^2 \omega_6^2 \omega_{16} \omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 12\omega_5 v_3^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 +$
$6\omega_5 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{11} \omega_8 - 24\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{16} \omega_7^2 \omega_{23} \omega_{17} \omega_{11} \omega_8 - 24\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{16} \omega_7^3 \omega_{20} \omega_{17} \omega_8 -$
$6\omega_5 v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8 + 24\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{16} \omega_7^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 + 24\omega_5 v_3 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} -$
$6\omega_5 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 12\omega_5 \omega_{18} v_2^2 \omega_6^2 \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 - 6\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{19} \omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$12\omega_5 \omega_{18} v_2^2 \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{11} - 24\omega_5 v_3 v_1 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^2 \omega_{23} c_s^2 \omega_{17} \omega_{11} + 12\omega_5 v_3^2 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^2 \omega_{23} \omega_{17} \omega_{11} -$
$12\omega_5 v_3^2 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{17} \omega_8 - 24\omega_5 v_3 v_1 \omega_{18} \omega_6^2 \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 6\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{19} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$12\omega_5 v_3^2 \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 - 24\omega_5 v_3 v_1 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 + 12\omega_5 \omega_{18} v_2^2 \omega_6^2 \omega_{16} \omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_8 -$
$12\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 24\omega_5 v_3 v_1 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 + 6\omega_5 v_3^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$6\omega_5 v_3^2 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{20} \omega_{11} \omega_8 + 12\omega_5 v_3 v_1 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_8 - 12\omega_5 v_3^2 v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{17} \omega_{11} \omega_8 +$
$12\omega_5 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8 - 6\omega_5 v_3^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 + 6\omega_5 v_3^2 \omega_{18} v_2^2 \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 -$
$6\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{19} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 + 12\omega_5 v_3^2 \omega_{18} v_2^2 \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{20} \omega_{11} + 12\omega_5 v_2^2 \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 -$
$12\omega_5 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_8 - 12\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_7^3 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 - 12\omega_5 \omega_{18} \omega_6^2 \omega_{16} \omega_7^2 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8 +$
$12\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{16} \omega_7^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 24\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{20} \omega_{17} \omega_{11} + 6\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8 -$
$12\omega_5 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} + 12\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_7^3 \omega_{23} \omega_{20} \omega_{11} \omega_8 - 12\omega_{18} \omega_6^2 \omega_{16} \omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8 -$
$6\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_8 - 12\omega_5 v_3^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 - 12\omega_5 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^2 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 -$
$12\omega_5 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} + 24\omega_5 v_3 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 - 24\omega_5 v_3 v_1 \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 -$
$24\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^2 \omega_{23} \omega_{17} \omega_{11} + 24\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{17} \omega_8 + 12\omega_5 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_8 +$
$12\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^2 \omega_{23} c_s^2 \omega_{17} \omega_{11} - 12\omega_5 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^2 \omega_{23} c_s^4 \omega_{20} \omega_{11} + 6\omega_5 v_3^2 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{20} \omega_{17} \omega_8 +$
$6\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 12\omega_5 v_3^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_8 - 24\omega_5 v_3 v_1 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} +$
$12\omega_5 v_3 v_1 \omega_{18} \omega_6^2 \omega_{19} \omega_7^3 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 24\omega_5 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 6\omega_5 v_3^2 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_7^3 \omega_{23} \omega_{20} \omega_{11} \omega_8 -$
$12\omega_5 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 12\omega_5 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^4 \omega_{20} \omega_{17} \omega_{11} - 24\omega_5 v_3 v_1 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_8 -$
$24\omega_5 v_3 v_1 \omega_{18} \omega_6^2 \omega_{16} \omega_7^2 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 12\omega_5 v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 - 24\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^2 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 -$
$12\omega_5 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^4 \omega_{17} \omega_{11} \omega_8 + 12\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 6\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 +$
$12\omega_5 v_3 v_1 \omega_{18} \omega_6^2 \omega_{19} \omega_7^3 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 - 24\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{20} \omega_{11} - 6\omega_5 v_3^2 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 -$
$12\omega_5 v_3^2 \omega_{18} \omega_6^2 \omega_{16} \omega_7^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 24\omega_5 v_3 v_1 \omega_{18} \omega_6^2 \omega_{19} \omega_7^2 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 24\omega_5 v_3 v_1 \omega_{18} v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{17} \omega_{11} \omega_8 +$
$24\omega_5 v_3 v_1 v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{17} \omega_{11} \omega_8 + 12\omega_5 v_3^2 v_2^2 \omega_6^2 \omega_{19} \omega_{16} \omega_7^3 \omega_{23} \omega_{17} \omega_8$

$C_{17} = -v_1 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 + 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_{11} \omega_8 + 2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$2v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} \omega_{20} \omega_{11} + v_1 \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} \omega_{17} \omega_{11} +$
$2v_3 v_1^2 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_{11} \omega_8 + 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_{11} - v_3 v_1^2 \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 + v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_7 \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 - v_3^2 v_1 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{11} \omega_8 - 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_8 + 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{16} \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{11} + v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{16} \omega_{23} \omega_{17} \omega_{11} \omega_8 - v_3 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$v_3 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 - 2v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{23} \omega_{20} \omega_{11} \omega_8 + 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} +$
$2v_3 v_1^2 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} + 2v_3^2 v_1 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_{11} \omega_8 - 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 - 2v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 +$
$v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 2v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{11} - v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_7 \omega_{23} \omega_{20} \omega_{11} \omega_8 -$
$2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - v_1 \omega_{18} \omega_6 \omega_{19} \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} c_s^2 \omega_{17} \omega_{11} + 2v_3^2 v_1 \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_8 +$
$2v_3^2 v_1 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_{11} - 2v_1 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} + v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_7 \omega_{23} \omega_{20} \omega_{11} \omega_8 - 2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 +$
$v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_8 - 2v_3 v_1^2 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{11} + 2v_3 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 - v_3 \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$2v_1 \omega_{18} \omega_6 \omega_{19} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + v_3^2 v_1 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 - 2v_3 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_8 + 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{20} \omega_{17} \omega_8 -$
$v_1 \omega_{18} \omega_6 \omega_{19} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 - v_1 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} c_s^2 \omega_{17} \omega_{11} + 2v_3 \omega_{18} \omega_6 \omega_{16} \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 - 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_1 \omega_{18} \omega_6 \omega_{19} \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 + 2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} -$
$2v_3 \omega_{18} \omega_6 \omega_{19} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 2v_3^2 v_1 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} - v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 + 2v_1 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_8 -$
$2v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 + v_3 v_1^2 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{11} \omega_8 + 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_8 -$
$v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_7 \omega_{20} \omega_{17} \omega_{11} \omega_8 + v_1 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$v_3 \omega_{18} \omega_6 \omega_{19} \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_3 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} -$
$2v_3 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{11} - 2v_3 \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_8 - 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_8 + v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{11} \omega_8 -$
$2v_1 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 + v_3 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + v_3 \omega_{18} \omega_6 \omega_{19} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 - 2v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} +$
$2v_1 \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_8 - 2v_3^2 v_1 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_{11} \omega_8 - 2v_1 \omega_{18} \omega_6 \omega_{16} \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_1 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{11} -$
$2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_{11} + 2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 + 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_8 - v_3 \omega_{18} \omega_6 \omega_{19} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{11} \omega_8 - 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_{11} \omega_8 -$
$v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{11} \omega_8 - 2v_3 \omega_{18} \omega_6 \omega_{16} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} \omega_{20} \omega_{11} \omega_8 - v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{20} \omega_{17} \omega_8 -$
$2v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_{11} + 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{16} \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 - 2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} - 2v_3 v_1^2 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_{11} \omega_8 -$
$2v_1 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 - v_1 \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8 + v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} \omega_{17} \omega_{11} \omega_8 -$
$2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_1 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 + v_3 v_1^2 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_1 \omega_{18} \omega_6 \omega_{16} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 -$
$2v_3 v_1^2 \omega_{18} \omega_6 \omega_{16} \omega_{23} \omega_{17} \omega_{11} \omega_8 + v_3 v_1^2 \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_8 - 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{23} \omega_{20} \omega_{11} \omega_8 - 2v_3^2 v_1 \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{17} \omega_{11} \omega_8 +$
$2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{20} \omega_{17} \omega_{11} \omega_8 - v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_8 - v_3 v_1^2 \omega_{18} \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 +$
$v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8 - 2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 - 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{16} \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_{11} +$
$2v_3^2 v_1 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 + v_3 \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_8 - 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} \omega_{17} \omega_{11} + 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} \omega_{20} \omega_{17} \omega_{11} -$
$2v_3^2 v_1 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_3 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_{11} \omega_8 + 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{11} + 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_8 -$
$v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} \omega_{20} \omega_{11} + 2v_3 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_7 \omega_{23} c_s^2 \omega_{17} \omega_8 -$
$2v_3^2 v_1 \omega_{18} \omega_6 \omega_{19} \omega_{16} \omega_{23} \omega_{20} \omega_{17} \omega_{11} + v_1 \omega_{18} \omega_6 \omega_{19} \omega_7 \omega_{23} c_s^2 \omega_{20} \omega_{17} \omega_{11} \omega_8 - 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{19} \omega_{20} \omega_{17} \omega_{11} \omega_8 + 2v_3 v_1^2 \omega_{18} \omega_6 \omega_{16} \omega_7 \omega_{20} \omega_{17} \omega_{11} \omega_8 -$

$v_3\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_3\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} -$
$2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} + 2v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} - 2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} -$
$v_3\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_1\omega_{18}\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 + 2v_3v_1^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_1\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} - v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_1\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 -$
$v_3\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3^2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8 + 2v_1\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11} -$
$2v_3\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + v_3\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - v_3^2v_1\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$2v_1\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - v_3^2v_1\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 +$
$2v_3^2v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} + 2v_3v_1^2\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2v_3\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_3\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11} +$
$2v_1\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3v_1^2\omega_{18}\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 + 2v_3\omega_{18}\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$v_3^2v_1\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8 + v_3v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 -$
$2v_3^2v_1\omega_{18}\omega_6\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3v_1^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 - 2v_3v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}$

$C_{18} =$
$v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11} +$
$v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11} + v_1^2\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 -$
$2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 + v_1^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 -$
$4v_3v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 - 2v_3v_1\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 + 2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} +$
$2v_1^2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 +$
$v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} - v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 +$
$4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11} - 2\omega_{18}v_2^2\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$v_1^2\omega_{18}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} + 2v_1^2\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} -$
$v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_1^2\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2v_1^2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} + 4v_3v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} - 2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} +$
$2v_3v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 +$
$4v_3v_1\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} + 2v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 +$
$2v_1^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - \omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 -$
$4v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 -$
$2v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} + 2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 4v_3v_1\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 -$
$4v_3v_1\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 - 2v_1^2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} -$
$4v_3v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8 +$
$2v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_1^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 2v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} + v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 +$
$2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_1^2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 - 4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11} - 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 -$
$4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11} +$
$4v_3v_1\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + \omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11} +$
$2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11} - 2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 +$
$2v_1^2\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11} - 2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_1^2\omega_{18}\omega_6\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2v_1^2\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 - 4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$v_1^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_3v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} -$
$2v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 + 2v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2v_3v_1v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 + 2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 - \omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$2v_1^2\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + v_1^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} - 4v_3v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} - 2v_1^2\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3v_1\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - 2\omega_{18}v_2^2\omega_6\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3v_1\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_1^2\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 - 2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} - 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 -$
$4v_3v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11} + 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}\omega_6\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 - 4v_3v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} + 2v_1^2\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} +$

$4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 + 2\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$v_1^2v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - 2v_1^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 2v_3v_1\omega_{18}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 + \omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_1^2\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} - 2v_1^2v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} -$
$4v_3v_1\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} + \omega_{18}v_2^2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 4v_3v_1\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} + 4v_3v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 + 2v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 +$
$2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 4v_3v_1\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 - 4v_3v_1v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + \omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8 +$
$4v_3v_1\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} - v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2v_1^2\omega_{18}v_2^2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 + v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 +$
$4v_3v_1\omega_{18}v_2^2\omega_6\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8 + 2v_1^2\omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8 + v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 - \omega_{18}v_2^2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 -$
$2v_1^2\omega_{18}v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} + 2v_3v_1\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 + 4v_3v_1\omega_{18}v_2^2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{11}\omega_8 + \omega_{18}v_2^2\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8$

$C_{19} =$
$3\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} + 36\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11} - 12v_2^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11} + 12v_2^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{11} + 36\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{11} +$
$12\omega_{19}\omega_{16}^2\omega_{23}\omega_{11} - 12v_2^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{11} - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{11} + 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{11} - 6v_2^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2 + 18v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} -$
$12\omega_{19}\omega_{16}^2\omega_{10}\omega_{23}\omega_{11} - 12v_2^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2 + 18v_2^2\omega_{19}\omega_{16}^2\omega_7\omega_{23}\omega_{11} - 12v_2^2\omega_{19}\omega_{16}^2\omega_{23}\omega_{11} - 12v_2^2\omega_{16}^2\omega_7^2\omega_{23} - 6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{11} -$
$12v_2^2\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11} + 18\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} + 36\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{11} + 3\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 5\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} - 6v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} -$
$12\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} - 9\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - \omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{11} - 12v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{11} - 15\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11} +$
$12\omega_{16}^2\omega_7^2\omega_{23} + 36\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 12\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 5v_2^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}^2\omega_{23}c_s^2\omega_{11} +$
$6v_2^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} - 36\omega_{16}^2\omega_7\omega_{23}c_s^2\omega_{11} - 18\omega_{19}\omega_{16}^2\omega_7\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} - 36\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{11} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} +$
$6v_2^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{11} + 12v_2^2\omega_{16}^2\omega_{10}\omega_7\omega_{11} + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11} + 12\omega_{16}^2\omega_7\omega_{23}\omega_{11} + 36\omega_{19}\omega_{16}^2\omega_{10}\omega_{23}c_s^2\omega_{11} -$
$18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 12v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{11} + 6v_2^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{11} - 12v_2^2\omega_{16}^2\omega_7\omega_{23}\omega_{11} + v_2^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} -$
$36\omega_{16}^2\omega_7^2\omega_{23}c_s^2 - 12\omega_{16}^2\omega_{10}\omega_7\omega_{11} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} - 12\omega_{16}^2\omega_{10}\omega_7^2 + 54\omega_{19}\omega_{16}^2\omega_7\omega_{23}c_s^2\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} + 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{11} +$
$12v_2^2\omega_{16}^2\omega_{10}\omega_7^2 + 12v_2^2\omega_{19}\omega_{16}^2\omega_{10}\omega_{23}\omega_{11} + 18\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{11} - 3v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 54\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}$

$C_{20} = 18v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} + 36v_2^2\omega_{16}\omega_{10}\omega_7^3 + 12\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11} + 54v_2^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 18v_2^2\omega_{19}\omega_{16}\omega_7^3\omega_{23} -$
$12\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11} + 36v_2^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 5\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} + 18v_2^2\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{16}\omega_{10}\omega_7^3 - 12\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} +$
$6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} + 12\omega_{16}\omega_{10}\omega_7^3c_s^2 + 18\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} + 18\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 36v_2^2\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11} -$
$18\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} + 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} + \omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 36v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 5\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} +$
$6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11} - 6\omega_{19}\omega_{10}\omega_7^3c_s^2\omega_{11} - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 5\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2 - 12\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11} -$
$36v_2^2\omega_{16}\omega_{10}\omega_7^3\omega_{11} - 12\omega_{19}\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 36v_2^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 54v_2^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{11} +$
$6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 - 15v_2^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} - 12\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 18v_2^2\omega_{19}\omega_{10}\omega_7^3\omega_{11} - 18\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} +$
$12\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{11} + 12\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} - 18v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11} - 12\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} +$
$36v_2^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 36v_2^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11} - 36v_2^2\omega_{16}\omega_7^3\omega_{23} + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 + 6\omega_{19}\omega_{10}\omega_7^3\omega_{11} - 12\omega_{16}\omega_7^3\omega_{23}c_s^2 + 12\omega_{16}\omega_7^3\omega_{23} +$
$12\omega_{16}\omega_{10}\omega_7^3\omega_{11} + 36v_2^2\omega_{19}\omega_{10}\omega_7^2\omega_{11} - 3v_2^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}$

$C_{21} = 12\omega_{18}^2\omega_{22}\omega_{13}\omega_{11}^2 - 6v_3^2\omega_{18}^2\omega_6^2\omega_{13}\omega_{11}^2 - 12v_3^2\omega_6\omega_{22}\omega_{13}\omega_{11}^3 - 12v_3^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}\omega_{11} + 36\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}c_s^2 - 18\omega_{18}^2\omega_6^2c_s^2\omega_{11}^3 -$
$12\omega_{18}\omega_6\omega_{13}\omega_{11}^3 - 12v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{13}\omega_{11} + 6v_3^2\omega_{18}^2\omega_6^2\omega_{13}\omega_{11}^3 + 6v_3^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{11}^2 - 12\omega_{18}^2\omega_{22}\omega_{13}\omega_{11}^3 - 36\omega_{18}^2\omega_6\omega_{22}c_s^2\omega_{11}^2 - 18\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_{11}^3 +$
$v_3^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3 - 36\omega_{18}\omega_{22}\omega_{13}c_s^2\omega_{11}^3 - 36\omega_{18}^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2 + 12v_3^2\omega_{18}^2\omega_6\omega_{11}^3 - 12v_3^2\omega_{18}^2\omega_{22}\omega_{13}\omega_{11}^2 + 18v_3^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 +$
$6\omega_{18}^2\omega_6^2\omega_{13}\omega_{11}^2 - 36\omega_{18}^2\omega_6\omega_{13}c_s^2\omega_{11}^3 - 18\omega_{18}^2\omega_6\omega_{22}\omega_{13}\omega_{11}^2 + 12\omega_6\omega_{22}\omega_{13}\omega_{11}^3 - 2v_3^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 + 36\omega_{18}\omega_6\omega_{13}c_s^2\omega_{11}^3 + 12v_3^2\omega_{18}\omega_6\omega_{13}\omega_{11}^3 +$
$12\omega_{18}^2\omega_6\omega_{22}\omega_{13}\omega_{11}^3 - 6\omega_{18}^2\omega_6^2\omega_{13}\omega_{11}^3 - 6\omega_{18}^2\omega_6^2\omega_{22}\omega_{11}^2 + 12v_3^2\omega_{18}^2\omega_{22}\omega_{13}\omega_{11}^3 - 6v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3 - 12\omega_{18}^2\omega_6\omega_{11}^3 + 36\omega_{18}^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3 +$
$12\omega_{18}\omega_6^2\omega_{22}\omega_{13}\omega_{11} - 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2 + 12v_3^2\omega_{18}\omega_6^2\omega_{13}\omega_{11}^2 - 36\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3 - 12\omega_{18}^2\omega_6^2\omega_{22}\omega_{13} + 12v_3^2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3 + 6\omega_{18}^2\omega_6^2\omega_{11}^3 -$
$18\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3 + 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3 - 36\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11} + 54\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3 + 18\omega_{18}^2\omega_6^2\omega_{22}c_s^2\omega_{11}^2 + 54\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2 +$
$12\omega_{18}\omega_{22}\omega_{13}\omega_{11}^3 - 6v_3^2\omega_{18}^2\omega_6^2\omega_{11}^3 + 12\omega_{18}^2\omega_6\omega_{22}\omega_{11}^2 + 12\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}\omega_{11} + 12\omega_{18}^2\omega_6\omega_{13}\omega_{11}^3 - 12v_3^2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 - 12v_3^2\omega_{18}\omega_6^2\omega_{13}\omega_{11}^3 -$
$12\omega_{18}\omega_6^2\omega_{13}\omega_{11}^2 + 18\omega_{18}^2\omega_6^2\omega_{13}c_s^2\omega_{11}^3 - 36\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11} + 2\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3 + 12v_3^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{13} -$
$40\omega_{18}^2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3 - 12v_3^2\omega_{18}^2\omega_6\omega_{22}\omega_{13}\omega_{11}^3 + 36\omega_{18}^2\omega_6c_s^2\omega_{11}^3 - 6\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2 + 6\omega_{18}\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3 + 36\omega_{18}\omega_6^2\omega_{13}c_s^2\omega_{11}^2 +$
$18v_3^2\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_{11}^3 - 12v_3^2\omega_{18}\omega_{22}\omega_{13}\omega_{11}^3 - 12v_3^2\omega_{18}^2\omega_6\omega_{22}\omega_{11}^2 + 54\omega_{18}^2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2 - \omega_{18}^2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3 - 12v_3^2\omega_{18}^2\omega_6\omega_{13}\omega_{11}^3 +$
$12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 + 12\omega_{18}\omega_6^2\omega_{13}\omega_{11}^3 - 18\omega_{18}^2\omega_6^2\omega_{13}c_s^2\omega_{11}^2 - 36\omega_{18}\omega_6^2\omega_{13}c_s^2\omega_{11}^3 - 18\omega_{18}\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 + 5\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3 + 18v_3^2\omega_{18}^2\omega_6\omega_{22}\omega_{13}\omega_{11}^2$

$C_{22} = 6\omega_{18}\omega_6^3\omega_{13}\omega_{11} - 18v_3^2\omega_{18}\omega_6^3\omega_{11}^2 + 12\omega_{18}\omega_6^2\omega_{22}\omega_{13} - 6\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11} - 6\omega_{18}\omega_6^3c_s^2\omega_{11}^2 + 12\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_{11} + 6\omega_{18}\omega_6^3\omega_{11}^2 -$
$12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11} + 36v_3^2\omega_6\omega_{22}\omega_{13}\omega_{11}^2 - 6\omega_{18}\omega_6^3\omega_{22}\omega_{11} + 72v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{13}\omega_{11} + 18v_3^2\omega_{18}\omega_6^3\omega_{13}\omega_{11}^2 - 12\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2 +$
$6\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2 - 18v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_{11} - 12\omega_6^2\omega_{13}\omega_{11}^2 + 36v_3^2\omega_{18}\omega_6^2\omega_{11}^2 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2 - 18v_3^2\omega_{18}\omega_6^3\omega_{13}\omega_{11} - 36v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{13} -$
$12\omega_{18}\omega_{22}\omega_{13}c_s^2\omega_{11}^2 + 36v_3^2\omega_6^2\omega_{13}\omega_{11}^2 - \omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2 - 12\omega_6\omega_{22}\omega_{13}\omega_{11}^2 + 18v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{11} - 6\omega_{18}\omega_6^3\omega_{13}\omega_{11}^2 - 12\omega_{18}\omega_6^2\omega_{11}^2 +$
$6\omega_{18}\omega_6^3\omega_{22}c_s^2\omega_{11} + 18\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2 - 24\omega_{18}\omega_6^2\omega_{22}\omega_{13}\omega_{11} - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2 - 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2 - 12\omega_6^3\omega_{13}\omega_{11} - 36v_3^2\omega_{18}\omega_6^2\omega_{13}\omega_{11}^2 +$
$12\omega_{18}\omega_6^2\omega_{22}\omega_{11} - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11} + 36v_3^2\omega_6^3\omega_{13}\omega_{11} - 36v_3^2\omega_6^3\omega_{22}\omega_{13}\omega_{11} + 12\omega_{18}\omega_6^2c_s^2\omega_{11}^2 - 12\omega_6^3\omega_{13}c_s^2\omega_{11}^2 + 6\omega_{18}\omega_6^3\omega_{13}c_s^2\omega_{11}^2 -$
$4\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2 - 6\omega_{18}\omega_6^3\omega_{22}\omega_{13} - 72v_3^2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2 - 36v_3^2\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_{11} + 12\omega_6^2\omega_{13}c_s^2\omega_{11}^2 +$
$12\omega_{18}\omega_6^2\omega_{13}\omega_{11}^2 + 24\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11} - 36v_3^2\omega_{18}\omega_6^2\omega_{22}\omega_{11} - 6\omega_{18}\omega_6^3\omega_{13}c_s^2\omega_{11} + 36v_3^2\omega_6^2\omega_{22}\omega_{13}\omega_{11} - 36v_3^2\omega_6^3\omega_{13}\omega_{11}^2 +$
$36v_3^2\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2 - 12\omega_{18}\omega_6^2\omega_{13}c_s^2\omega_{11}^2 + 12\omega_6^3\omega_{13}c_s^2\omega_{11} + 18v_3^2\omega_{18}\omega_6^3\omega_{22}\omega_{13} + 6\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_{11} + 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 - 12\omega_{18}\omega_6^2\omega_{22}c_s^2\omega_{11} -$
$12\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11} + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11} + 12\omega_6^3\omega_{13}\omega_{11}^2 + 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}$

$C_{23} = -6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^3 + 12\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^2 + v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 18\omega_{19}^2\omega_{16}\omega_7^2c_s^2\omega_{11}^2 - 36\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{11}^3 + 18\omega_{19}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 +$
$18v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 18\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 - 2v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 18\omega_{19}^2\omega_{16}\omega_7^2c_s^2\omega_{11}^3 - 6\omega_{19}^2\omega_7^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^3 +$
$12v_3^2\omega_{19}\omega_{16}\omega_7\omega_{11}^3 - 36\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} + 54\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 12v_3^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 36\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{11}^2 - 6v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 +$
$36\omega_{19}^2\omega_7c_s^2\omega_{11}^3 - 36\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 36\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} - 18\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 36\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{11}^3 - 36\omega_{19}^2\omega_{16}\omega_{23}c_s^2\omega_{11}^2 -$
$18\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 12v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 6v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^3 + 6\omega_{19}^2\omega_7^2\omega_{11}^3 - 12v_3^2\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^2 + 36\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 - 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 +$
$12\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 12v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 36\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 12\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 5\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 6v_3^2\omega_{19}^2\omega_7^2\omega_{23}\omega_{11}^2 -$

$6v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^2 - 12\omega_{19}\omega_{16}\omega_7\omega_{11}^3 + 12v_3^2\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^3 + 36\omega_{19}^2\omega_{16}\omega_{23}c_s^2\omega_{11}^3 - 6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3 + 2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 18\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3 - 36\omega_{19}^2\omega_7\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 54\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3 + 12v_3^2\omega_{19}^2\omega_7\omega_{11}^3 + 6\omega_{19}\omega_{16}\omega_7^2\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - \omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{19}^2\omega_7\omega_{11}^3 - 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_{23}\omega_{11}^3 - 18\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 12v_3^2\omega_{19}^2\omega_{16}\omega_7\omega_{11}^3 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} - 12v_3^2\omega_{19}^2\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 12v_3^2\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 54\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^2 - 12v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{11}^3 - 12v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 36\omega_{19}\omega_{16}\omega_7c_s^2\omega_{11}^3 + 12v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_7\omega_{11}^3 - 12v_3^2\omega_{19}\omega_{16}\omega_{23}\omega_{11}^3 + 12v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} - 40\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3 + 12\omega_{19}^2\omega_7\omega_{23}\omega_{11}^2 + 18v_3^2\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 36\omega_{19}^2\omega_{16}\omega_7c_s^2\omega_{11}^3 + 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 18v_3^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 12v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 36\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3$

$C_{24} = 12\omega_{16}\omega_7^2c_s^2\omega_{11}^2 + 36v_3^2\omega_{16}\omega_7^2\omega_{11}^2 - 12\omega_{16}\omega_7^3\omega_{11} + 12\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11} + 36v_3^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 36v_3^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} + 18v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 18v_3^2\omega_{19}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23} - 12\omega_{16}\omega_7^2\omega_{11}^2 + 36v_3^2\omega_{16}\omega_7^3\omega_{11} + 12\omega_{19}\omega_7^2c_s^2\omega_{11}^2 - 4\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} + 6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{11}^2 - 12\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 24\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} + 12\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{11} - \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} - 36v_3^2\omega_{16}\omega_7^3\omega_{11}^2 + 72v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{11}^2 - 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 + 36v_3^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{16}\omega_7^3\omega_{11}^2 - 6\omega_{19}\omega_7^3\omega_{23}\omega_{11} - 36v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23} - 6\omega_{19}\omega_7^3c_s^2\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11}^2 + 24\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{11} - 36v_3^2\omega_{19}\omega_7^2\omega_{23}\omega_{11} + 36v_3^2\omega_{19}\omega_7^2\omega_{11}^2 + 18\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^2 + 36v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 36v_3^2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2 - 12\omega_{16}\omega_7^3c_s^2\omega_{11}^2 - 12\omega_{19}\omega_7^2\omega_{11}^2 + 18v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{11}^2 - 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{16}\omega_7^3c_s^2\omega_{11} - 18v_3^2\omega_{19}\omega_7^3\omega_{11}^2 - 18v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{11} + 12\omega_{19}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^2 - 12\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11} - 18v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 72v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 - 36v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{11}^2 + 6\omega_{19}\omega_7^3\omega_{11}^2 - 6\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11} - 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}$

$C_{25} = 12\omega_{18}\omega_6^2c_s^4\omega_{11}^2 - 72v_3^2\omega_{18}\omega_6^3\omega_{11}^2 - \omega_{18}^2\omega_6^3c_s^4\omega_{11}^3 - 36v_3^2\omega_{18}^2\omega_6^2c_s^2\omega_{11} - 72v_3^2\omega_{18}^2\omega_6^3 + 36v_3^2\omega_{18}\omega_6c_s^2\omega_{11}^3 + 6\omega_{18}\omega_6^3c_s^2\omega_{11}^2 + 252v_3^2\omega_{18}^2\omega_6^3c_s^2 - 5\omega_{18}^2\omega_6^2c_s^2\omega_{11}^3 - 108v_3^2\omega_6^2c_s^2\omega_{11}^3 + 39v_3^2\omega_{18}\omega_6^3\omega_{11}^3 - 18\omega_{18}\omega_6^2c_s^4\omega_{11}^3 + \omega_{18}^2\omega_6^3c_s^4\omega_{11}^2 - 6\omega_{18}\omega_6^3c_s^2\omega_{11}^3 - 6\omega_{18}^2\omega_6^2c_s^2\omega_{11}^2 - 12\omega_{18}^2\omega_6^3c_s^2 - 6v_3^4\omega_{18}^2\omega_6^2\omega_{11}^3 - 90v_3^4\omega_{18}^2\omega_6^3\omega_{11} - 108v_3^2\omega_{18}\omega_6^3c_s^2\omega_{11} + 12\omega_{18}^2\omega_6^2c_s^2\omega_{11} - 12\omega_{18}\omega_6c_s^2\omega_{11}^3 + 198v_3^2\omega_{18}\omega_6^3c_s^2\omega_{11}^2 + 19v_3^4\omega_{18}^2\omega_6^3\omega_{11}^2 - 3v_3^2\omega_{18}^2\omega_6^2c_s^2\omega_{11}^3 + 72v_3^4\omega_{18}^2\omega_6^3 - 12\omega_{18}^2\omega_6^3c_s^4\omega_{11} - 99v_3^2\omega_{18}\omega_6^3c_s^2\omega_{11}^3 + 18v_3^2\omega_{18}^2\omega_6^2c_s^2\omega_{11}^2 + 4v_3^4\omega_{18}^2\omega_6^3\omega_{11}^3 - 24\omega_{18}^2\omega_6c_s^4\omega_{11}^3 + 36v_3^2\omega_{18}\omega_6^3\omega_{11} - 36v_3^2\omega_{18}\omega_6^2\omega_{11}^3 + 72v_3^4\omega_{18}\omega_6^3\omega_{11}^2 - 18v_3^2\omega_{18}^2\omega_6c_s^2\omega_{11}^3 - \omega_{18}^2\omega_6^3c_s^2\omega_{11}^2 + 36v_3^2\omega_6^2\omega_{11}^3 + 18\omega_{18}\omega_6^2c_s^2\omega_{11}^3 + 6\omega_{18}^2\omega_6^2c_s^4\omega_{11}^2 + 6\omega_{18}\omega_6^3c_s^4\omega_{11}^3 + 108v_3^2\omega_6^3c_s^2\omega_{11}^3 + 36v_3^4\omega_6^3\omega_{11}^3 - 306v_3^2\omega_{18}^2\omega_6^3c_s^2\omega_{11} - 12\omega_{18}\omega_6^2c_s^2\omega_{11}^2 - 39v_3^4\omega_{18}\omega_6^3\omega_{11}^3 + 6v_3^2\omega_{18}^2\omega_6\omega_{11}^3 + 90v_3^2\omega_{18}^2\omega_6^3\omega_{11} - 36v_3^4\omega_6^3\omega_{11}^2 - 108v_3^2\omega_6^3c_s^2\omega_{11}^2 + 13\omega_{18}^2\omega_6^2c_s^4\omega_{11}^3 - 6\omega_{18}\omega_6^3c_s^4\omega_{11}^2 - 36v_3^4\omega_6^2\omega_{11}^3 - 19v_3^2\omega_{18}^2\omega_6^3\omega_{11}^2 + 6\omega_{18}^2\omega_6c_s^2\omega_{11}^3 + 60v_3^2\omega_{18}^2\omega_6^3c_s^2\omega_{11}^2 + 54v_3^2\omega_{18}\omega_6^2c_s^2\omega_{11}^3 + 12\omega_{18}^2c_s^4\omega_{11}^3 - 36v_3^2\omega_6^3\omega_{11}^3 - 12\omega_{18}^2\omega_6^2c_s^4\omega_{11} + 12\omega_{18}^2\omega_6^3c_s^4 + 12\omega_{18}\omega_6c_s^4\omega_{11}^3 - 4v_3^2\omega_{18}^2\omega_6^3\omega_{11}^3 - 36v_3^4\omega_{18}\omega_6^3\omega_{11} + 36v_3^2\omega_6^3\omega_{11}^2 + 36v_3^4\omega_{18}\omega_6^2\omega_{11}^3 + 12\omega_{18}^2\omega_6^3c_s^2\omega_{11} + 12v_3^2\omega_{18}^2\omega_6^3c_s^2\omega_{11}^3 + 36v_3^2\omega_{18}\omega_6^2c_s^2\omega_{11}^2$

$C_{26} = -19v_3^2\omega_{19}^2\omega_7^3\omega_{11}^2 + 6\omega_{19}\omega_7^3c_s^4\omega_{11}^3 + 6\omega_{19}^2\omega_7^2c_s^4\omega_{11}^2 - 18v_3^2\omega_{19}^2\omega_7c_s^2\omega_{11}^3 + 18\omega_{19}\omega_7^2c_s^2\omega_{11}^3 - \omega_{19}^2\omega_7^3c_s^2\omega_{11}^2 + 108v_3^2\omega_7^3c_s^2\omega_{11}^3 - 6\omega_{19}\omega_7^3c_s^4\omega_{11}^2 - 4v_3^2\omega_{19}^2\omega_7^3\omega_{11}^3 + 13\omega_{19}^2\omega_7^2c_s^4\omega_{11}^3 + 12\omega_{19}^2\omega_7^3c_s^4 - 12\omega_{19}\omega_7^2c_s^2\omega_{11}^2 - 108v_3^2\omega_7^3c_s^2\omega_{11}^2 + 36v_3^4\omega_{19}\omega_7^2\omega_{11}^3 - 36v_3^4\omega_{19}\omega_7^3\omega_{11} - 306v_3^2\omega_{19}^2\omega_7^3c_s^2\omega_{11} + 6\omega_{19}^2\omega_7c_s^2\omega_{11}^3 + 54v_3^2\omega_{19}\omega_7^2c_s^2\omega_{11}^3 + 72v_3^4\omega_{19}\omega_7^3\omega_{11}^2 + 60v_3^2\omega_{19}^2\omega_7^3c_s^2\omega_{11}^2 + 12\omega_{19}^2c_s^4\omega_{11}^3 + 36v_3^2\omega_{19}\omega_7^2c_s^2\omega_{11}^2 + 12v_3^2\omega_{19}^2\omega_7^3c_s^2\omega_{11}^3 - 39v_3^4\omega_{19}\omega_7^3\omega_{11}^3 + 12\omega_{19}^2\omega_7^3c_s^2\omega_{11} + 12\omega_{19}\omega_7c_s^4\omega_{11}^3 - 12\omega_{19}^2\omega_7^2c_s^4\omega_{11} + 90v_3^2\omega_{19}^2\omega_7^3\omega_{11} + 6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3 + 36v_3^2\omega_{19}\omega_7c_s^2\omega_{11}^3 + 19v_3^4\omega_{19}^2\omega_7^3\omega_{11}^2 - 5\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3 - 36v_3^4\omega_7^2\omega_{11}^3 + 6\omega_{19}\omega_7^3c_s^2\omega_{11}^2 - 36v_3^2\omega_{19}^2\omega_7^2c_s^2\omega_{11} - \omega_{19}^2\omega_7^3c_s^4\omega_{11}^3 + 12\omega_{19}\omega_7^2c_s^4\omega_{11}^2 - 36v_3^2\omega_7^3\omega_{11}^3 - 108v_3^2\omega_{19}\omega_7^3c_s^2\omega_{11} - 108v_3^2\omega_7^2c_s^2\omega_{11}^3 - 6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2 - 6\omega_{19}\omega_7^3c_s^2\omega_{11}^3 + 4v_3^4\omega_{19}^2\omega_7^3\omega_{11}^3 - 36v_3^2\omega_{19}\omega_7^2\omega_{11}^3 + 72v_3^4\omega_{19}^2\omega_7^3 + 36v_3^2\omega_7^3\omega_{11}^2 + 36v_3^2\omega_{19}\omega_7^3\omega_{11} + \omega_{19}^2\omega_7^3c_s^4\omega_{11}^2 - 18\omega_{19}\omega_7^2c_s^4\omega_{11}^3 + 36v_3^2\omega_7^2\omega_{11}^3 - 72v_3^2\omega_{19}\omega_7^3\omega_{11}^2 - 12\omega_{19}^2\omega_7^3c_s^4\omega_{11} - 12\omega_{19}\omega_7c_s^2\omega_{11}^3 + 252v_3^2\omega_{19}^2\omega_7^3c_s^2 - 3v_3^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3 + 198v_3^2\omega_{19}\omega_7^3c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_7^2c_s^2\omega_{11} + 36v_3^4\omega_7^3\omega_{11}^3 + 39v_3^2\omega_{19}\omega_7^3\omega_{11}^3 - 24\omega_{19}^2\omega_7c_s^4\omega_{11}^3 - 90v_3^4\omega_{19}^2\omega_7^3\omega_{11} - 72v_3^2\omega_{19}^2\omega_7^3 - 36v_3^4\omega_7^3\omega_{11}^2 - 6v_3^4\omega_{19}^2\omega_7^2\omega_{11}^3 + 18v_3^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2 - 99v_3^2\omega_{19}\omega_7^3c_s^2\omega_{11}^3 - 12\omega_{19}^2\omega_7^3c_s^2$

$C_{27} = 12 - 9v_3^4\omega_{11}^3 + 144v_3^4 + 90v_3^4\omega_{11}^2 + 198c_s^2\omega_{11} - 1008v_3^2c_s^2\omega_{11} + 404v_3^2c_s^2\omega_{11}^2 + 672v_3^2c_s^2 - 216v_3^4\omega_{11} - 78c_s^2\omega_{11}^2 - \omega_{11}^3 - 34v_3^2c_s^2\omega_{11}^3 + 6c_s^2\omega_{11}^3 + 8\omega_{11}^2 + 144c_s^4 - 216c_s^4\omega_{11} - 98v_3^2\omega_{11}^2 + 10v_3^2\omega_{11}^3 - 132c_s^2 - 156v_3^2 - 5c_s^4\omega_{11}^3 - 18\omega_{11} + 82c_s^4\omega_{11}^2 + 234v_3^2\omega_{11}$

$C_{28} = 12 - 29v_3^4\omega_{11}^3 + 504v_3^4 + 310v_3^4\omega_{11}^2 + 54c_s^2\omega_{11} - 648v_3^2c_s^2\omega_{11} + 252v_3^2c_s^2\omega_{11}^2 + 432v_3^2c_s^2 - 756v_3^4\omega_{11} - 22c_s^2\omega_{11}^2 - \omega_{11}^3 - 18v_3^2c_s^2\omega_{11}^3 + 2c_s^2\omega_{11}^3 + 8\omega_{11}^2 + 24c_s^4 - 36c_s^4\omega_{11} - 154v_3^2\omega_{11}^2 + 14v_3^2\omega_{11}^3 - 36c_s^2 - 252v_3^2 - c_s^4\omega_{11}^3 - 18\omega_{11} + 14c_s^4\omega_{11}^2 + 378v_3^2\omega_{11}$

2.5 CLBM2

2.5.1 Definitions

Collision operator $\boldsymbol{C}$:

$$\boldsymbol{C}(\boldsymbol{f}) = \mathbf{K}^{-1}\mathbf{S}\left(\boldsymbol{\kappa}^{(eq)} - \mathbf{K}\boldsymbol{f}\right),$$

where

$$\mathbf{S} = \mathrm{diag}(\omega_1, \omega_2, \cdots, \omega_{27}),$$

$\omega_1, \omega_2, \cdots, \omega_{27} \in (0, 2)$.

Matrix $\mathbf{K}$ corresponds to the transformation matrix to the central moment basis defined by

$$\boldsymbol{\kappa} = \begin{pmatrix} k_{(0,0,0)} \\ k_{(1,0,0)} \\ k_{(0,1,0)} \\ k_{(0,0,1)} \\ k_{(1,1,0)} \\ k_{(1,0,1)} \\ k_{(0,1,1)} \\ k_{(2,0,0)} - k_{(0,2,0)} \\ k_{(2,0,0)} - k_{(0,0,2)} \\ k_{(2,0,0)} + k_{(0,2,0)} + k_{(0,0,2)} \\ k_{(1,2,0)} + k_{(1,0,2)} \\ k_{(2,1,0)} + k_{(0,1,2)} \\ k_{(2,0,1)} + k_{(0,2,1)} \\ k_{(1,2,0)} - k_{(1,0,2)} \\ k_{(2,1,0)} - k_{(0,1,2)} \\ k_{(2,0,1)} - k_{(0,2,1)} \\ k_{(1,1,1)} \\ k_{(2,2,0)} - 2k_{(2,0,2)} + k_{(0,2,2)} \\ k_{(2,2,0)} + k_{(2,0,2)} - 2k_{(0,2,2)} \\ k_{(2,2,0)} + k_{(2,0,2)} + k_{(0,2,2)} \\ k_{(2,1,1)} \\ k_{(1,2,1)} \\ k_{(1,1,2)} \\ k_{(2,2,1)} \\ k_{(2,1,2)} \\ k_{(1,2,2)} \\ k_{(2,2,2)} \end{pmatrix},$$

The transformation matrix $\mathbf{K}$ satisfies

$$
\begin{aligned}
\mathbf{K}_{1,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,0,0)} \\
\mathbf{K}_{2,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,0,0)} \\
\mathbf{K}_{3,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,1,0)} \\
\mathbf{K}_{4,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,0,1)} \\
\mathbf{K}_{5,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,1,0)} \\
\mathbf{K}_{6,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,0,1)} \\
\mathbf{K}_{7,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(0,1,1)} \\
\mathbf{K}_{8,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,0,0)} - (\boldsymbol{c}_i - \boldsymbol{v})^{(0,2,0)} \\
\mathbf{K}_{9,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,0,0)} - (\boldsymbol{c}_i - \boldsymbol{v})^{(0,0,2)} \\
\mathbf{K}_{10,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,0,0)} + (\boldsymbol{c}_i - \boldsymbol{v})^{(0,2,0)} + (\boldsymbol{c}_i - \boldsymbol{v})^{(0,0,2)} \\
\mathbf{K}_{11,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,2,0)} + (\boldsymbol{c}_i - \boldsymbol{v})^{(1,0,2)} \\
\mathbf{K}_{12,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,1,0)} + (\boldsymbol{c}_i - \boldsymbol{v})^{(0,1,2)} \\
\mathbf{K}_{13,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,0,1)} + (\boldsymbol{c}_i - \boldsymbol{v})^{(0,2,1)} \\
\mathbf{K}_{14,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,2,0)} - (\boldsymbol{c}_i - \boldsymbol{v})^{(1,0,2)} \\
\mathbf{K}_{15,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,1,0)} - (\boldsymbol{c}_i - \boldsymbol{v})^{(0,1,2)} \\
\mathbf{K}_{16,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,2,0)} - (\boldsymbol{c}_i - \boldsymbol{v})^{(0,2,1)} \\
\mathbf{K}_{17,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,1,1)} \\
\mathbf{K}_{18,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,2,0)} - 2\,(\boldsymbol{c}_i - \boldsymbol{v})^{(2,0,2)} + (\boldsymbol{c}_i - \boldsymbol{v})^{(0,2,2)} \\
\mathbf{K}_{19,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,2,0)} + (\boldsymbol{c}_i - \boldsymbol{v})^{(2,0,2)} - 2\,(\boldsymbol{c}_i - \boldsymbol{v})^{(0,2,2)} \\
\mathbf{K}_{20,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,2,0)} + (\boldsymbol{c}_i - \boldsymbol{v})^{(2,0,2)} + (\boldsymbol{c}_i - \boldsymbol{v})^{(0,2,2)} \\
\mathbf{K}_{21,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,1,1)} \\
\mathbf{K}_{22,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,2,1)} \\
\mathbf{K}_{23,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,1,2)} \\
\mathbf{K}_{24,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,2,1)} \\
\mathbf{K}_{25,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,1,2)} \\
\mathbf{K}_{26,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(1,2,2)} \\
\mathbf{K}_{27,i} &= (\boldsymbol{c}_i - \boldsymbol{v})^{(2,2,2)}\,,
\end{aligned}
$$

$\forall i \in \{1, 2, \cdots, 27\}$. The equilibrium central moments are defined by

$$\boldsymbol{\kappa}^{(eq)} = \mathbf{K}\mathbf{M}^{-1}\boldsymbol{\mu}^{(eq)},$$

i.e.,

$$\boldsymbol{\kappa}^{(eq)} = \Big(\rho, 0, 0, 0, 0, 0, 0, 0, 0, 3\rho c_s^2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 3\rho c_s^4, 0, 0, 0, 0, 0, 0, \rho c_s^6\Big)^T.$$

2.5.2 Conservation of mass: ρ

$$\frac{\partial \rho}{\partial t} + \frac{\delta_l v_1}{\delta_t}\frac{\partial \rho}{\partial x_1} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l v_2}{\delta_t}\frac{\partial \rho}{\partial x_2} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\delta_l v_3}{\delta_t}\frac{\partial \rho}{\partial x_3} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-1+3c_s^2+v_1^2)\frac{\delta_l^3 v_1}{12\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} +$$
$$(-1+c_s^2+3v_1^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{\rho\delta_l^3 c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{\rho\delta_l^3 c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+v_2^2+3c_s^2)\frac{\delta_l^3 v_2}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + (-1+3v_2^2+c_s^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} -$$
$$\frac{\rho\delta_l^3 c_s^2}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{\rho\delta_l^3 c_s^2}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{\rho\delta_l^3 c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{\rho\delta_l^3 c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+3c_s^2+v_3^2)\frac{\delta_l^3 v_3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}$$
$$+ (-2c_s^2-6v_1^2-3\omega_9 v_1^4+24c_s^2v_1^2-\omega_9c_s^4+3\omega_9v_1^2+\omega_9c_s^2-12\omega_9c_s^2v_1^2+2c_s^4+6v_1^4)\frac{\delta_l^4}{24\omega_9\delta_t}\frac{\partial^4 \rho}{\partial x_1^4} +$$
$$(-4+6c_s^2+10v_1^2+2\omega_9-5\omega_9v_1^2-3\omega_9c_s^2)\frac{\rho\delta_l^4 v_1}{12\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} +$$
$$(3\omega_9\omega_{12}c_s^2+\omega_9\omega_{12}v_1^2+3\omega_9-\omega_{12}-3\omega_9v_1^2-9\omega_9c_s^2+3\omega_{12}c_s^2-\omega_9\omega_{12}+\omega_{12}v_1^2)\frac{\rho\delta_l^4 v_1}{12\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} +$$
$$(-2+\omega_5)\frac{\delta_l^4 c_s^4}{6\omega_5\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_2^2} +$$
$$(3\omega_{15}\omega_{10}c_s^2+\omega_{15}\omega_{10}v_2^2-\omega_{15}\omega_{10}-\omega_{15}+3\omega_{15}c_s^2+\omega_{15}v_2^2+3\omega_{10}-9\omega_{10}c_s^2-3\omega_{10}v_2^2)\frac{\rho\delta_l^4 v_2}{12\omega_{15}\delta_t\omega_{10}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$(-6v_2^2-2c_s^2-\omega_{10}c_s^4-3\omega_{10}v_2^4-12\omega_{10}v_2^2c_s^2+24v_2^2c_s^2+6v_2^4+2c_s^4+\omega_{10}c_s^2+3\omega_{10}v_2^2)\frac{\delta_l^4}{24\delta_t\omega_{10}}\frac{\partial^4 \rho}{\partial x_2^4} +$$
$$(-4+10v_2^2+6c_s^2+2\omega_{10}-3\omega_{10}c_s^2-5\omega_{10}v_2^2)\frac{\rho\delta_l^4 v_2}{12\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$(3\omega_{13}c_s^2+\omega_{13}v_1^2+3\omega_9+3\omega_9\omega_{13}c_s^2-\omega_9\omega_{13}-3\omega_9v_1^2+\omega_9\omega_{13}v_1^2-9\omega_9c_s^2-\omega_{13})\frac{\rho\delta_l^4 v_1}{12\omega_9\delta_t\omega_{13}}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$(-\omega_{16}\omega_{10}+3\omega_{16}\omega_{10}c_s^2+\omega_{16}\omega_{10}v_2^2-\omega_{16}+3\omega_{10}+3\omega_{16}c_s^2+\omega_{16}v_2^2-9\omega_{10}c_s^2-3\omega_{10}v_2^2)\frac{\rho\delta_l^4 v_2}{12\delta_t\omega_{16}\omega_{10}}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$(-2+\omega_6)\frac{\delta_l^4 c_s^4}{6\omega_6\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_3^2} + (-2+\omega_7)\frac{\delta_l^4 c_s^4}{6\delta_t\omega_7}\frac{\partial^4 \rho}{\partial x_2^2\partial x_3^2} +$$
$$(3\omega_{11}+\omega_{18}v_3^2-9\omega_{11}c_s^2-\omega_{11}\omega_{18}+3\omega_{18}c_s^2-3\omega_{11}v_3^2-\omega_{18}+\omega_{11}\omega_{18}v_3^2+3\omega_{11}\omega_{18}c_s^2)\frac{\rho\delta_l^4 v_3}{12\omega_{11}\omega_{18}\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} +$$
$$(3\omega_{11}-9\omega_{11}c_s^2+3\omega_{11}\omega_{19}c_s^2-3\omega_{11}v_3^2+\omega_{11}\omega_{19}v_3^2+3\omega_{19}c_s^2-\omega_{19}-\omega_{11}\omega_{19}+\omega_{19}v_3^2)\frac{\rho\delta_l^4 v_3}{12\omega_{11}\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$(-12\omega_{11}v_3^2c_s^2-2c_s^2+\omega_{11}c_s^2+3\omega_{11}v_3^2-6v_3^2-3\omega_{11}v_3^4+24v_3^2c_s^2+6v_3^4+2c_s^4-\omega_{11}c_s^4)\frac{\delta_l^4}{24\omega_{11}\delta_t}\frac{\partial^4 \rho}{\partial x_3^4} +$$
$$(-4+2\omega_{11}+6c_s^2-3\omega_{11}c_s^2-5\omega_{11}v_3^2+10v_3^2)\frac{\rho\delta_l^4 v_3}{12\omega_{11}\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0.$$

2.5.3 Conservation of momentum: ρv_1

$$v_1\frac{\partial \rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (c_s^2+v_1^2)\frac{\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_1} + \frac{2\rho\delta_l v_1}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l v_2 v_1}{\delta_t}\frac{\partial \rho}{\partial x_2} + \frac{\rho\delta_l v_2}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{\rho\delta_l v_1}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\delta_l v_3 v_1}{\delta_t}\frac{\partial \rho}{\partial x_3} + \frac{\rho\delta_l v_3}{\delta_t}\frac{\partial v_1}{\partial x_3} +$$
$$\frac{\rho\delta_l v_1}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+4c_s^2+6v_1^2+\omega_9-3\omega_9v_1^2-2\omega_9c_s^2)\frac{\delta_l^2}{\omega_9\delta_t}\frac{\partial \rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + (2-\omega_9)\frac{3\rho\delta_l^2 v_1}{\omega_9\delta_t}\left(\frac{\partial v_1}{\partial x_1}\right)^2 +$$
$$(-2+\omega_5)\frac{\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial \rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial \rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + (-2+\omega_6)\frac{\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial \rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial \rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} +$$
$$(-2+6c_s^2+2v_1^2+\omega_9-\omega_9v_1^2-3\omega_9c_s^2)\frac{\delta_l^2 v_1}{2\omega_9\delta_t}\frac{\partial^2 \rho}{\partial x_1^2} + (-2+2c_s^2+6v_1^2+\omega_9-3\omega_9v_1^2-\omega_9c_s^2)\frac{\rho\delta_l^2}{2\omega_9\delta_t}\frac{\partial^2 v_1}{\partial x_1^2} +$$
$$(-2+\omega_5)\frac{\rho\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2+\omega_5)\frac{\rho\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial^2 v_1}{\partial x_2^2} + (-2+\omega_6)\frac{\rho\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2+\omega_6)\frac{\rho\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\omega_9^2\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} +$$
$$(-24-4\omega_9^2+36c_s^2+60v_1^2+5\omega_9^2c_s^2+24\omega_9+11\omega_9^2v_1^2-60\omega_9v_1^2-36\omega_9c_s^2)\frac{\rho\delta_l^3 v_1}{6\omega_9^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_2\frac{\rho\delta_l^3 v_1}{12\omega_5\omega_9^2\omega_{12}\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$(-12+12\omega_5-\omega_5^2)\frac{\delta_l^3 c_s^4}{6\omega_5^2\delta_t}\frac{\partial^3 \rho}{\partial x_1\partial x_2^2} - \frac{\rho\delta_l^3 c_s^2 v_1}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+v_2^2+3c_s^2)\frac{\delta_l^3 v_2 v_1}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + C_3\frac{\rho\delta_l^3 v_2}{6\omega_5\omega_{15}\delta_t}\frac{\partial^3 v_1}{\partial x_2^3} +$$
$$(-1+3v_2^2+c_s^2)\frac{\rho\delta_l^3 v_1}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_4\frac{\rho\delta_l^3 v_1}{12\omega_9^2\omega_6\delta_t\omega_{13}}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{\rho\delta_l^3 c_s^2 v_1}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + (-12-\omega_6^2+12\omega_6)\frac{\delta_l^3 c_s^4}{6\omega_6^2\delta_t}\frac{\partial^3 \rho}{\partial x_1\partial x_3^2} -$$
$$\frac{\rho\delta_l^3 c_s^2 v_1}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{\rho\delta_l^3 c_s^2 v_1}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+3c_s^2+v_3^2)\frac{\delta_l^3 v_3 v_1}{12\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + C_5\frac{\rho\delta_l^3 v_3}{6\omega_{18}\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{\rho\delta_l^3 v_1}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$C_6\frac{\delta_l^4 v_1}{12\omega_9^3\delta_t}\frac{\partial^4 \rho}{\partial x_1^4} + C_7\frac{\rho\delta_l^4}{12\omega_9^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_8\frac{\rho\delta_l^4}{12\omega_5^3\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_9\frac{\delta_l^4 c_s^2 v_1}{12\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_2^2} +$$
$$C_{10}\frac{\rho\delta_l^4 c_s^2}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{11}\frac{\delta_l^4 v_2 c_s^2}{12\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}\delta_t\omega_{10}}\frac{\partial^4 \rho}{\partial x_1\partial x_2^3} +$$
$$(3\omega_{15}\omega_{10}c_s^2+\omega_{15}\omega_{10}v_2^2-\omega_{15}\omega_{10}-\omega_{15}+3\omega_{15}c_s^2+\omega_{15}v_2^2+3\omega_{10}-9\omega_{10}c_s^2-3\omega_{10}v_2^2)\frac{\rho\delta_l^4 v_2 v_1}{12\omega_{15}\delta_t\omega_{10}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$C_{12}\frac{\rho\delta_l^4 c_s^2}{12\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} +$$

$$(-6v_2^2 - 2c_s^2 - \omega_{10}c_s^4 - 3\omega_{10}v_2^4 - 12\omega_{10}v_2^2c_s^2 + 24v_2^2c_s^2 + 6v_2^4 + 2c_s^4 + \omega_{10}c_s^2 + 3\omega_{10}v_2^2)\frac{\delta_l^4 v_1}{24\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_2^4} +$$
$$C_{13}\frac{\rho\delta_l^4}{24\omega_5^3\omega_{15}^2\delta_t}\frac{\partial^4 v_1}{\partial x_2^4} + (-4 + 10v_2^2 + 6c_s^2 + 2\omega_{10} - 3\omega_{10}c_s^2 - 5\omega_{10}v_2^2)\frac{\rho\delta_l^4 v_2 v_1}{12\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^4} + C_{14}\frac{\rho\delta_l^4}{12\omega_9^3\omega_6^3\delta_t\omega_{13}^2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$C_{15}\frac{\rho\delta_l^4 c_s^4}{12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\delta_t\omega_{13}\omega_7}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} +$$
$$(-\omega_{16}\omega_{10} + 3\omega_{16}\omega_{10}c_s^2 + \omega_{16}\omega_{10}v_2^2 - \omega_{16} + 3\omega_{10} + 3\omega_{16}c_s^2 + \omega_{16}v_2^2 - 9\omega_{10}c_s^2 - 3\omega_{10}v_2^2)\frac{\rho\delta_l^4 v_2 v_1}{12\delta_t\omega_{16}\omega_{10}}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$C_{16}\frac{\delta_l^4 c_s^2 v_1}{12\omega_{18}\omega_9^3\omega_6^2\omega_{22}\delta_t\omega_{13}^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{17}\frac{\rho\delta_l^4 c_s^2}{12\omega_{18}\omega_9^2\omega_6^3\omega_{22}\delta_t\omega_{13}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{18}\frac{\delta_l^4}{2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\delta_t\omega_{13}\omega_{20}}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{19}\frac{\rho\delta_l^4}{2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\delta_t\omega_{13}\omega_{20}}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{20}\frac{\rho\delta_l^4}{12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_7\omega_{20}}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{21}\frac{\rho\delta_l^4 v_3}{\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\delta_t\omega_{13}\omega_{20}}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{22}\frac{\delta_l^4}{12\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\delta_t\omega_7\omega_{20}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} +$$
$$C_{23}\frac{\rho\delta_l^4}{4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2\delta_t\omega_{20}}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} + C_{24}\frac{\rho\delta_l^4 v_2}{2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\delta_t\omega_{20}}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{25}\frac{\rho\delta_l^4}{4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\delta_t\omega_{20}}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} +$$
$$C_{26}\frac{\delta_l^4 v_3 c_s^2}{12\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}\delta_t\omega_{13}}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} +$$
$$(3\omega_{11} + \omega_{18}v_3^2 - 9\omega_{11}c_s^2 - \omega_{11}\omega_{18} + 3\omega_{18}c_s^2 - 3\omega_{11}v_3^2 - \omega_{18} + \omega_{11}\omega_{18}v_3^2 + 3\omega_{11}\omega_{18}c_s^2)\frac{\rho\delta_l^4 v_3 v_1}{12\omega_{11}\omega_{18}\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} +$$
$$C_{27}\frac{\rho\delta_l^4 c_s^2}{12\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}\delta_t\omega_{13}}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$(3\omega_{11} - 9\omega_{11}c_s^2 + 3\omega_{11}\omega_{19}c_s^2 - 3\omega_{11}v_3^2 + \omega_{11}\omega_{19}v_3^2 + 3\omega_{19}c_s^2 - \omega_{19} - \omega_{11}\omega_{19} + \omega_{19}v_3^2)\frac{\rho\delta_l^4 v_3 v_1}{12\omega_{11}\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$(-12\omega_{11}v_3^2c_s^2 - 2c_s^2 + \omega_{11}c_s^2 + 3\omega_{11}v_3^2 - 6v_3^2 - 3\omega_{11}v_3^4 + 24v_3^2c_s^2 + 6v_3^4 + 2c_s^4 - \omega_{11}c_s^4)\frac{\delta_l^4 v_1}{24\omega_{11}\delta_t}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$C_{28}\frac{\rho\delta_l^4}{24\omega_{18}^2\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_3^4} + (-4 + 2\omega_{11} + 6c_s^2 - 3\omega_{11}c_s^2 - 5\omega_{11}v_3^2 + 10v_3^2)\frac{\rho\delta_l^4 v_3 v_1}{12\omega_{11}\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

$$C_1 = 24\omega_9^2c_s^2v_1^2 - 12c_s^2 - 36v_1^2 - 36\omega_9v_1^4 + 144c_s^2v_1^2 - \omega_9^2c_s^2 - 12\omega_9c_s^4 - 7\omega_9^2v_1^2 + \omega_9^2c_s^4 + 36\omega_9v_1^2 + 7\omega_9^2v_1^4 + 12\omega_9c_s^2 - 144\omega_9c_s^2v_1^2 + 12c_s^4 + 36v_1^4$$

$$C_2 = 12\omega_5\omega_9^2v_1^2 - 6\omega_9^2\omega_{12} + 12\omega_9^2 + 36\omega_5\omega_9^2c_s^2 - 36\omega_9^2c_s^2 - 3\omega_5\omega_9^2\omega_{12}v_1^2 + 3\omega_5\omega_9^2\omega_{12} - 12\omega_9^2v_1^2 - 11\omega_5\omega_9^2\omega_{12}c_s^2 + 18\omega_9^2\omega_{12}c_s^2 + 12\omega_5\omega_{12}v_1^2 + 6\omega_5\omega_9\omega_{12} - 6\omega_5\omega_9\omega_{12}v_1^2 - 12\omega_5\omega_{12} + 6\omega_9^2\omega_{12}v_1^2 + 12\omega_5\omega_9 + 36\omega_5\omega_{12}c_s^2 - 18\omega_5\omega_9\omega_{12}c_s^2 - 36\omega_5\omega_9c_s^2 - 12\omega_5\omega_9^2 - 12\omega_5\omega_9v_1^2$$

$$C_3 = 6 - 6v_2^2 - 18c_s^2 - 3\omega_5 - 3\omega_{15} + 9\omega_{15}c_s^2 + 3\omega_{15}v_2^2 + \omega_5\omega_{15} + 3\omega_5v_2^2 + 9\omega_5c_s^2 - \omega_5\omega_{15}v_2^2 - 3\omega_5\omega_{15}c_s^2$$

$$C_4 = 12\omega_9^2 - 6\omega_9\omega_6\omega_{13}v_1^2 - 12\omega_9^2\omega_6 + 36\omega_6\omega_{13}c_s^2 - 18\omega_9\omega_6\omega_{13}c_s^2 + 12\omega_6\omega_{13}v_1^2 - 12\omega_9\omega_6v_1^2 + 18\omega_9^2\omega_{13}c_s^2 - 36\omega_9^2c_s^2 + 6\omega_9\omega_6\omega_{13} - 36\omega_9\omega_6c_s^2 + 6\omega_9^2\omega_{13}v_1^2 - 6\omega_9^2\omega_{13} - 12\omega_9^2v_1^2 + 12\omega_9^2\omega_6v_1^2 + 3\omega_9^2\omega_6\omega_{13} - 3\omega_9^2\omega_6\omega_{13}v_1^2 + 36\omega_9^2\omega_6c_s^2 - 11\omega_9^2\omega_6\omega_{13}c_s^2 - 12\omega_6\omega_{13} + 12\omega_9\omega_6$$

$$C_5 = 6 + \omega_{18}\omega_6 - 18c_s^2 + 3\omega_{18}v_3^2 + 9\omega_{18}c_s^2 - 3\omega_{18} - 6v_3^2 - 3\omega_6 - 3\omega_{18}\omega_6c_s^2 + 3\omega_6v_3^2 - \omega_{18}\omega_6v_3^2 + 9\omega_6c_s^2$$

$$C_6 = 12 + 6\omega_9^3c_s^2 + 404\omega_9^2c_s^2v_1^2 + 8\omega_9^2 - 132c_s^2 + 10\omega_9^3v_1^2 - \omega_9^3 - 156v_1^2 - 216\omega_9v_1^4 + 672c_s^2v_1^2 - 78\omega_9^2c_s^2 - 18\omega_9 - 216\omega_9c_s^4 - 98\omega_9^2v_1^2 + 82\omega_9^2c_s^4 + 234\omega_9v_1^2 + 90\omega_9^2v_1^4 - 34\omega_9^3c_s^2v_1^2 + 198\omega_9c_s^2 - 1008\omega_9c_s^2v_1^2 + 144c_s^4 - 5\omega_9^3c_s^4 + 144v_1^4 - 9\omega_9^3v_1^4$$

$$C_7 = 12 + 2\omega_9^3c_s^2 + 252\omega_9^2c_s^2v_1^2 + 8\omega_9^2 - 36c_s^2 + 14\omega_9^3v_1^2 - \omega_9^3 - 252v_1^2 - 756\omega_9v_1^4 + 432c_s^2v_1^2 - 22\omega_9^2c_s^2 - 18\omega_9 - 36\omega_9c_s^4 - 154\omega_9^2v_1^2 + 14\omega_9^2c_s^4 + 378\omega_9v_1^2 + 310\omega_9^2v_1^4 - 18\omega_9^3c_s^2v_1^2 + 54\omega_9c_s^2 - 648\omega_9c_s^2v_1^2 + 24c_s^4 - \omega_9^3c_s^4 + 504v_1^4 - 29\omega_9^3v_1^4$$

$$C_8 = 12\omega_5^3\omega_9^3\omega_{12}^2c_s^2v_1^2 + 12\omega_9^3\omega_{12}^2c_s^4 - 6\omega_5^2\omega_9^2\omega_{12}^2c_s^2 - \omega_5^3\omega_9^3\omega_{12}^2c_s^4 - 108\omega_5^3\omega_9^2c_s^2v_1^2 - 72\omega_5^3\omega_{12}^2v_1^2 + 54\omega_5^2\omega_9^3\omega_{12}c_s^2v_1^2 + 12\omega_5\omega_9^3\omega_{12}c_s^4 + 39\omega_5^3\omega_9^3\omega_{12}v_1^2 - 12\omega_5^2\omega_9\omega_{12}^2c_s^4 + 36\omega_5\omega_9^3\omega_{12}c_s^2v_1^2 - 36\omega_5^3\omega_9^3v_1^2 + 4\omega_5^3\omega_9^3\omega_{12}^2v_1^4 + 6\omega_5\omega_9^3\omega_{12}^2c_s^2 - 36\omega_5^2\omega_9\omega_{12}^2c_s^2v_1^2 + 12\omega_5^2\omega_9^2\omega_{12}c_s^4 - 12\omega_5^3\omega_{12}^2c_s^2 - 108\omega_5^3\omega_9\omega_{12}c_s^2v_1^2 - 6\omega_5^3\omega_9^3\omega_{12}c_s^2 - 36\omega_5^2\omega_9^3v_1^4 - 6\omega_5^2\omega_9^3\omega_{12}^2v_1^4 - 19\omega_5^3\omega_9^2\omega_{12}^2v_1^2 - 90\omega_5^3\omega_9\omega_{12}^2v_1^4 + 18\omega_5^2\omega_9^3\omega_{12}c_s^2 - 6\omega_5^3\omega_9^2\omega_{12}c_s^4 + 13\omega_5^2\omega_9^3\omega_{12}^2c_s^4 + 36\omega_5^3\omega_9\omega_{12}v_1^2 + 60\omega_5^3\omega_9^2\omega_{12}^2c_s^2v_1^2 - \omega_5^3\omega_9^2\omega_{12}^2c_s^2 - 36\omega_5^2\omega_9^3\omega_{12}v_1^2 - 12\omega_5^3\omega_9\omega_{12}^2c_s^4 + 72\omega_5^3\omega_9^2\omega_{12}v_1^4 + 36\omega_5^2\omega_9^2\omega_{12}c_s^2v_1^2 + 36\omega_5^3\omega_9^2v_1^2 + 90\omega_5^3\omega_9\omega_{12}^2v_1^2 - 18\omega_5^2\omega_9^3\omega_{12}c_s^4 + 6\omega_5^3\omega_9^2\omega_{12}c_s^2 + 36\omega_5^2\omega_9^3v_1^2 + 6\omega_5^2\omega_9^3\omega_{12}^2v_1^2 + 19\omega_5^3\omega_9^2\omega_{12}^2v_1^4 + 198\omega_5^3\omega_9^2\omega_{12}c_s^2v_1^2 + 36\omega_5^2\omega_9^3\omega_{12}v_1^4 + 12\omega_5^3\omega_9\omega_{12}^2c_s^2 - 72\omega_5^3\omega_9^2\omega_{12}v_1^2 - 36\omega_5^3\omega_9^2v_1^4 - 5\omega_5^2\omega_9^3\omega_{12}^2c_s^2 - 36\omega_5^3\omega_9\omega_{12}v_1^4 + 18\omega_5^2\omega_9^2\omega_{12}^2c_s^2v_1^2 + 108\omega_5^3\omega_9^3c_s^2v_1^2 + \omega_5^3\omega_9^2\omega_{12}^2c_s^4 + 72\omega_5^3\omega_{12}^2v_1^4 - 12\omega_5\omega_9^3\omega_{12}c_s^2 - 39\omega_5^3\omega_9^3\omega_{12}v_1^4 - 99\omega_5^3\omega_9^3\omega_{12}c_s^2v_1^2 + 12\omega_5^2\omega_9\omega_{12}^2c_s^2 + 6\omega_5^2\omega_9^2\omega_{12}^2c_s^4 - 108\omega_5^2\omega_9^3c_s^2v_1^2 - 3\omega_5^2\omega_9^3\omega_{12}^2c_s^2v_1^2 + 252\omega_5^3\omega_{12}^2c_s^2v_1^2 - 12\omega_5^2\omega_9^2\omega_{12}c_s^2 + 12\omega_5^3\omega_{12}^2c_s^4 - 18\omega_5\omega_9^3\omega_{12}^2c_s^2v_1^2 + 6\omega_5^3\omega_9^3\omega_{12}c_s^4 - 306\omega_5^3\omega_9\omega_{12}^2c_s^2v_1^2 + 36\omega_5^3\omega_9^3v_1^4 - 4\omega_5^3\omega_9^3\omega_{12}^2v_1^2 - 24\omega_5\omega_9^3\omega_{12}^2c_s^4$$

$$C_9 = 18\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_1^2 + 36\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2c_s^2 - 36\omega_5\omega_{21}\omega_{15}\omega_9^3c_s^2 + 36\omega_5\omega_{15}\omega_9^3\omega_{12}c_s^2 + 12\omega_5\omega_9^3\omega_{12}^2v_1^2 + 12\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 6\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 6\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2c_s^2 - \omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5^2\omega_{15}\omega_9^3\omega_{12}v_1^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9^3v_1^2 + 54\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}c_s^2 + 12\omega_5\omega_{15}\omega_9^3\omega_{12}v_1^2 + 36\omega_5\omega_9^3\omega_{12}^2c_s^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2v_1^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9^3v_1^2 + 12\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 36\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2c_s^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 + 36\omega_5^2\omega_{21}\omega_{15}\omega_9^3c_s^2 - 36\omega_5^2\omega_{15}\omega_9^3\omega_{12}c_s^2 + 12\omega_5\omega_{15}\omega_9^3\omega_{12}^2 - 2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9^2v_1^2 + 2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}c_s^2 - 6\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2v_1^2 + 12\omega_5\omega_{21}\omega_{15}\omega_9^3 - 12\omega_5\omega_{15}\omega_9^3\omega_{12} + 18\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2v_1^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12\omega_5\omega_9^3\omega_{12}^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_9^2c_s^2 - 18\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2c_s^2 + 6\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 6\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_1^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 54\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2c_s^2 - 36\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2c_s^2 - 36\omega_5\omega_{21}\omega_9^2\omega_{12}^2c_s^2 + \omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 + 12\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36\omega_5^2\omega_{15}\omega_9^2\omega_{12}c_s^2 - 12\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_5\omega_{21}\omega_9^2\omega_{12}^2 + 6\omega_5^2\omega_9^3\omega_{12}^2 - 6\omega_5^2\omega_9^3\omega_{12}^2v_1^2 + 6\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2v_1^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 6\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 +$$

$12\omega_5^2\omega_{15}\omega_9^2\omega_{12}v_1^2 - 12\omega_5\omega_{21}\omega_9^2\omega_{12}^2v_1^2 + 5\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2c_s^2 - 18\omega_5^2\omega_9^3\omega_{12}^2c_s^2 + 18\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2c_s^2 - 12\omega_5\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 -$
$40\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2c_s^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2c_s^2 - 12\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 36\omega_{21}\omega_{15}\omega_9^3\omega_{12}c_s^2 +$
$12\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 18\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}v_1^2 + 18\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2c_s^2 - 36\omega_5\omega_{15}\omega_9^3\omega_{12}^2c_s^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2v_1^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2v_1^2 -$
$12\omega_{21}\omega_{15}\omega_9^3\omega_{12}v_1^2 + 6\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2v_1^2 + 54\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}c_s^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 6\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2$

$C_{10} = 6\omega_5^3\omega_{15}\omega_9\omega_{12} + 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 6\omega_5^3\omega_9^2\omega_{12} + 18\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 + 72\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 12\omega_5^2\omega_{15}\omega_9^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}c_s^2 +$
$24\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 - 72\omega_5^2\omega_{21}\omega_{15}\omega_9^2v_1^2 + 6\omega_5^3\omega_{21}\omega_9\omega_{12}c_s^2 - \omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}c_s^2 + 6\omega_5^3\omega_{15}\omega_9^2\omega_{12}c_s^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 + 12\omega_5^3\omega_{15}\omega_9c_s^2 +$
$12\omega_5\omega_{21}\omega_{15}\omega_9^2c_s^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9c_s^2 - 12\omega_{21}\omega_{15}\omega_9^2\omega_{12}c_s^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9^2 - 24\omega_5^2\omega_{21}\omega_{15}\omega_9^2c_s^2 + 18\omega_5^3\omega_{21}\omega_9\omega_{12}v_1^2 - 36\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 +$
$18\omega_5^3\omega_{15}\omega_9^2\omega_{12}v_1^2 + 36\omega_5\omega_{21}\omega_{15}\omega_9^2v_1^2 + 36\omega_5^3\omega_{15}\omega_9v_1^2 - 36\omega_5^3\omega_{21}\omega_{15}\omega_9v_1^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9c_s^2 + 12\omega_5^2\omega_{21}\omega_9\omega_{12} - 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 -$
$6\omega_5^3\omega_9^2\omega_{12}c_s^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9 - 12\omega_5^2\omega_{15}\omega_9^2\omega_{12}c_s^2 + 12\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_5^3\omega_{15}\omega_9^2 - 36\omega_5^3\omega_{15}\omega_9^2v_1^2 - 12\omega_5^2\omega_{21}\omega_9\omega_{12}c_s^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2 -$
$6\omega_5^3\omega_{15}\omega_9\omega_{12}c_s^2 + 36\omega_5^3\omega_{21}\omega_{15}\omega_9^2v_1^2 + 18\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}c_s^2 + 36\omega_5^2\omega_{21}\omega_{15}\omega_9v_1^2 - 18\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_1^2 - 36\omega_5^2\omega_{15}\omega_9^2\omega_{12}v_1^2 - 18\omega_5^3\omega_9^2\omega_{12}v_1^2 -$
$36\omega_5^2\omega_{21}\omega_9\omega_{12}v_1^2 - 12\omega_5^3\omega_{15}\omega_9^2c_s^2 - 12\omega_5^2\omega_9^2\omega_{12} + 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2c_s^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 18\omega_5^3\omega_{15}\omega_9\omega_{12}v_1^2 + 36\omega_5^2\omega_9^2\omega_{12}v_1^2 -$
$36\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_1^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 24\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_5^2\omega_{15}\omega_9^2c_s^2 + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 6\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 12\omega_5^3\omega_{15}\omega_9 +$
$12\omega_5^3\omega_{21}\omega_{15}\omega_9 + 12\omega_5^2\omega_9^2\omega_{12}c_s^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}c_s^2 - 6\omega_5^3\omega_{21}\omega_9\omega_{12} - 4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}c_s^2 + 24\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 36\omega_5^2\omega_{15}\omega_9^2v_1^2$

$C_{11} = 12\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10} - 12\omega_5^2\omega_{21}\omega_{15}^2v_2^2 - 36\omega_5^2\omega_{21}\omega_{15}^2c_s^2 - 6\omega_5^2\omega_{15}^2\omega_9\omega_{12}\omega_{10} - 12\omega_5^2\omega_{15}^2\omega_{10} + 5\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 18\omega_5^2\omega_{21}\omega_9\omega_{12}\omega_{10}c_s^2 +$
$18\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}c_s^2 + 12\omega_5\omega_{15}^2\omega_9\omega_{12}\omega_{10} + 6\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2 + 6\omega_5^2\omega_{21}\omega_9\omega_{12}\omega_{10}v_2^2 - 18\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36\omega_{21}\omega_{15}^2\omega_9\omega_{12}c_s^2 - 6\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}v_2^2 -$
$18\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}c_s^2 - 12\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 + 12\omega_5^2\omega_{15}^2\omega_9\omega_{10} + 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9v_2^2 - 36\omega_5\omega_{21}\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_{21}\omega_9\omega_{12}\omega_{10}v_2^2 + 12\omega_5^2\omega_{21}\omega_{15}^2 +$
$36\omega_5^2\omega_{21}\omega_{15}^2\omega_9c_s^2 + \omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_2^2 + 6\omega_5^2\omega_{15}^2\omega_{12}\omega_{10} - 12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}v_2^2 - 6\omega_5^2\omega_{21}\omega_9\omega_{12}\omega_{10} - 36\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 -$
$6\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10}c_s^2 - 3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}v_2^2 + 12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} - \omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10} + 12\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_2^2 +$
$36\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5\omega_{21}\omega_9\omega_{12}\omega_{10} - 9\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 12\omega_5\omega_{21}\omega_{15}^2\omega_9v_2^2 - 36\omega_5\omega_{21}\omega_{15}^2\omega_9c_s^2 -$
$6\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}v_2^2 + 6\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 18\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 36\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_2^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} -$
$5\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 - 12\omega_5\omega_{15}^2\omega_9\omega_{10} + 12\omega_5^2\omega_{15}^2\omega_{10}v_2^2 + 54\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}v_2^2 + 36\omega_5^2\omega_{15}^2\omega_{10}c_s^2 -$
$15\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}c_s^2 + 6\omega_5^2\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_2^2 + 18\omega_5^2\omega_{15}^2\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10} + 18\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}v_2^2 + 54\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}c_s^2 +$
$12\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_5\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_2^2 + 12\omega_5\omega_{15}^2\omega_9\omega_{10}v_2^2 + 36\omega_5\omega_{15}^2\omega_9\omega_{10}c_s^2 - 36\omega_5\omega_{15}^2\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5^2\omega_{15}^2\omega_9\omega_{10}v_2^2 +$
$12\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10}v_2^2 + 36\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 36\omega_5^2\omega_{15}^2\omega_9\omega_{10}c_s^2 + 12\omega_5\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{21}\omega_{15}^2\omega_9\omega_{12}\omega_{10} + 3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}$

$C_{12} = -\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 36\omega_5^3\omega_{15}\omega_{10}v_2^2 + 12\omega_5^3\omega_{15}\omega_{10}c_s^2 + 5\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 18\omega_5^2\omega_{21}\omega_9\omega_{12}\omega_{10}c_s^2 - 54\omega_5^2\omega_{21}\omega_9\omega_{12}\omega_{10}v_2^2 +$
$6\omega_5^3\omega_{21}\omega_{15}\omega_{12}c_s^2 + 18\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10}v_2^2 + 18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 + 54\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 18\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2 +$
$12\omega_5\omega_{21}\omega_9\omega_{12}\omega_{10}c_s^2 + 36\omega_5\omega_{21}\omega_9\omega_{12}\omega_{10}v_2^2 - 12\omega_5^3\omega_{15}\omega_{10} + 12\omega_5^2\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 + 36\omega_5^3\omega_{21}\omega_{15}\omega_9v_2^2 - 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10} +$
$18\omega_5^2\omega_{21}\omega_9\omega_{12}\omega_{10} - 12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5^3\omega_{21}\omega_{15}\omega_9c_s^2 - 36\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 36\omega_5^2\omega_9\omega_{12}\omega_{10}v_2^2 - 3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}v_2^2 -$
$12\omega_5\omega_{21}\omega_9\omega_{12}\omega_{10} - 5\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5^2\omega_{15}\omega_9\omega_{10}c_s^2 - 18\omega_5^3\omega_{15}\omega_{12}\omega_{10}v_2^2 - 6\omega_5^3\omega_{15}\omega_{12}\omega_{10}c_s^2 + 36\omega_5^2\omega_{15}\omega_9\omega_{10}v_2^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9c_s^2 -$
$36\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}v_2^2 - 5\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2 - 6\omega_5^3\omega_{21}\omega_9\omega_{12}\omega_{10} - 12\omega_5^3\omega_{21}\omega_{15}c_s^2 - 18\omega_5^3\omega_9\omega_{12}\omega_{10}v_2^2 + 12\omega_5^3\omega_{21}\omega_{15} - 6\omega_5^3\omega_9\omega_{12}\omega_{10}c_s^2 +$
$12\omega_5^2\omega_{21}\omega_{15}\omega_9 - 36\omega_5^3\omega_{21}\omega_{15}v_2^2 + 6\omega_5^3\omega_9\omega_{12}\omega_{10} - 15\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}v_2^2 + 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_9v_2^2 +$
$6\omega_5^3\omega_{21}\omega_9\omega_{12}\omega_{10}c_s^2 + 18\omega_5^3\omega_{21}\omega_9\omega_{12}\omega_{10}v_2^2 + 12\omega_5^3\omega_{15}\omega_9\omega_{10} - 36\omega_5^3\omega_{15}\omega_9\omega_{10}v_2^2 + 18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5^3\omega_{15}\omega_9\omega_{10}c_s^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$
$18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_5^2\omega_9\omega_{12}\omega_{10} + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_5^3\omega_{21}\omega_{15}\omega_9 - 12\omega_5^2\omega_{15}\omega_9\omega_{10} + 6\omega_5^3\omega_{15}\omega_{12}\omega_{10} + \omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}$

$C_{13} = 24\omega_5^2\omega_{15}^2c_s^4 - 12\omega_5^2\omega_{15}^2v_2^4 + 12\omega_5\omega_{15}^2c_s^2 - 12\omega_5^2\omega_{15}^2v_2^2c_s^2 + 72\omega_5^2v_2^2 + 24\omega_5\omega_{15}c_s^4 + 24\omega_5^2\omega_{15}c_s^2 - 72\omega_5^2\omega_{15}v_2^2 + 6\omega_5^3\omega_{15}^2v_2^2c_s^2 + 6\omega_5^3\omega_{15}c_s^4 -$
$30\omega_5^3\omega_{15}v_2^4 + \omega_5^3\omega_{15}^2c_s^2 + 108\omega_5^3v_2^2c_s^2 - 3\omega_5^3\omega_{15}^2v_2^2 + 72\omega_5\omega_{15}v_2^2c_s^2 - 36\omega_5^3v_2^2 - 72\omega_5^3\omega_{15}v_2^2c_s^2 - 6\omega_5^3\omega_{15}c_s^2 + 30\omega_5^3\omega_{15}v_2^2 + 36\omega_5^3v_2^4 - 3\omega_5^3\omega_{15}^2c_s^4 + 24\omega_{15}^2c_s^4 +$
$3\omega_5^3\omega_{15}^2v_2^4 - 36\omega_5\omega_{15}^2v_2^2c_s^2 - 48\omega_5\omega_{15}^2c_s^4 - 8\omega_5^2\omega_{15}^2c_s^2 + 12\omega_5^2\omega_{15}^2v_2^2 - 216\omega_5^2v_2^2c_s^2 - 24\omega_5^2\omega_{15}c_s^4 + 144\omega_5^2\omega_{15}v_2^2c_s^2 + 72\omega_5^2\omega_{15}v_2^4 - 72\omega_5^2v_2^4 - 24\omega_5\omega_{15}c_s^2$

$C_{14} = 12\omega_9\omega_6^2\omega_{13}^2c_s^2 - 6\omega_9^3\omega_6^2\omega_{13}^2v_1^4 - 36\omega_9^3\omega_6^2v_1^4 + 36\omega_9^3\omega_6\omega_{13}c_s^2v_1^2 + 12\omega_9^3\omega_6\omega_{13}c_s^4 - 19\omega_9^2\omega_6^3\omega_{13}^2v_1^2 + 18\omega_9^3\omega_6^2\omega_{13}c_s^2 - 108\omega_9\omega_6^3\omega_{13}c_s^2v_1^2 -$
$6\omega_9^2\omega_6^3\omega_{13}c_s^4 + 198\omega_9^2\omega_6^3\omega_{13}c_s^2v_1^2 + 13\omega_9^3\omega_6^2\omega_{13}^2c_s^4 - \omega_9^2\omega_6^3\omega_{13}^2c_s^2 + 12\omega_9^3\omega_6^3\omega_{13}^2c_s^2v_1^2 - 36\omega_9^3\omega_6^2\omega_{13}v_1^2 + 72\omega_9^2\omega_6^3\omega_{13}v_1^4 + 6\omega_9^3\omega_6\omega_{13}^2c_s^2 +$
$36\omega_9^2\omega_6^3v_1^2 - 90\omega_9\omega_6^3\omega_{13}^2v_1^4 + 6\omega_9^2\omega_6^2\omega_{13}^2c_s^4 + 36\omega_9^2\omega_6^2\omega_{13}c_s^2v_1^2 + 12\omega_6^3\omega_{13}^2c_s^4 - 39\omega_9^3\omega_6^3\omega_{13}v_1^4 - 108\omega_9^3\omega_6^2c_s^2v_1^2 - 3\omega_9^3\omega_6^2\omega_{13}^2c_s^2v_1^2 + 36\omega_9^3\omega_6^3v_1^4 -$
$4\omega_9^3\omega_6^3\omega_{13}^2v_1^2 - 12\omega_9\omega_6^3\omega_{13}^2c_s^4 + 72\omega_6^3\omega_{13}^2v_1^4 + 36\omega_9\omega_6^3\omega_{13}v_1^2 + 6\omega_9^3\omega_6^3\omega_{13}c_s^4 - 12\omega_9^2\omega_6^2\omega_{13}c_s^2 - 108\omega_9^2\omega_6^3c_s^2v_1^2 - 12\omega_6^3\omega_{13}^2c_s^2 + 39\omega_9^3\omega_6^3\omega_{13}v_1^2 +$
$18\omega_9^2\omega_6^2\omega_{13}^2c_s^2v_1^2 - 36\omega_9^3\omega_6^3v_1^2 + 54\omega_9^3\omega_6^2\omega_{13}c_s^2v_1^2 - \omega_9^3\omega_6^3\omega_{13}^2c_s^4 + 90\omega_9\omega_6^3\omega_{13}^2v_1^2 - 6\omega_9^2\omega_6^2\omega_{13}^2c_s^2 - 36\omega_9\omega_6^3\omega_{13}v_1^4 - 72\omega_6^3\omega_{13}^2v_1^2 - 6\omega_9^3\omega_6^3\omega_{13}c_s^2 +$
$12\omega_9^2\omega_6^2\omega_{13}c_s^4 + 4\omega_9^3\omega_6^3\omega_{13}^2v_1^4 + 12\omega_9\omega_6^3\omega_{13}^2c_s^2 + 252\omega_6^3\omega_{13}^2c_s^2v_1^2 - 36\omega_9\omega_6^2\omega_{13}^2c_s^2v_1^2 - 18\omega_9^3\omega_6^2\omega_{13}c_s^4 - 18\omega_9^3\omega_6\omega_{13}^2c_s^2v_1^2 + 6\omega_9^3\omega_6^3\omega_{13}c_s^2 +$
$12\omega_9^3\omega_{13}^2c_s^4 - 12\omega_9\omega_6^2\omega_{13}^2c_s^4 + 6\omega_9^3\omega_6^2\omega_{13}^2v_1^2 + 36\omega_9^3\omega_6^2v_1^2 - 306\omega_9\omega_6^3\omega_{13}^2c_s^2v_1^2 - 12\omega_9^3\omega_6\omega_{13}c_s^2 + 19\omega_9^2\omega_6^3\omega_{13}^2v_1^4 + 36\omega_9^3\omega_6^2\omega_{13}v_1^4 -$
$72\omega_9^2\omega_6^3\omega_{13}v_1^2 + 60\omega_9^2\omega_6^3\omega_{13}^2c_s^2v_1^2 - 24\omega_9^3\omega_6\omega_{13}^2c_s^4 - 36\omega_9^2\omega_6^3v_1^4 + 108\omega_9^3\omega_6^3c_s^2v_1^2 - 5\omega_9^3\omega_6^2\omega_{13}^2c_s^2 + \omega_9^2\omega_6^3\omega_{13}^2c_s^4 - 99\omega_9^3\omega_6^3\omega_{13}c_s^2v_1^2$

$C_{15} = -12\omega_{17}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7 + 12\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_6^2\omega_{13} - 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{13} + 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{13} -$
$12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2 - 12\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 + 24\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 - 18\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13} -$
$18\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 + 12\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 + 12\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6\omega_{13}\omega_7 +$
$6\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7 + 12\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13} + 12\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_{13}\omega_7 + 12\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 -$
$12\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 - 12\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 + 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2 - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9\omega_6^2\omega_{13}\omega_7 +$
$6\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 + 12\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_7 - 12\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{13}\omega_7 + 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6 +$
$6\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7 - 18\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13} - 24\omega_{17}\omega_{14}\omega_8\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 - 12\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_7 -$
$6\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{13}\omega_7 - 6\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12}\omega_6\omega_{13}\omega_7 - \omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 + 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_6^2\omega_{13} +$
$12\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7 + 10\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13} - 12\omega_{17}\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 - 6\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 +$
$12\omega_{17}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 + 12\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 - 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_6^2\omega_{13} - 2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 +$
$12\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7 - 12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7 - 12\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6^2\omega_7 + 12\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_6^2\omega_{13}\omega_7 +$
$12\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7 - 12\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_6\omega_{13}\omega_7$

$C_{16} = -6\omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13}v_1^2 + 36\omega_{18}\omega_9^3\omega_6\omega_{13}c_s^2 - 12\omega_{18}\omega_9^3\omega_6\omega_{22}v_1^2 + 12\omega_{18}\omega_9^3\omega_{22}\omega_{13} + 12\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2v_1^2 + 6\omega_{18}\omega_9^3\omega_6^2\omega_{13}^2v_1^2 +$
$12\omega_{18}\omega_9^2\omega_6^2\omega_{22} - 18\omega_{18}\omega_9^2\omega_6\omega_{22}\omega_{13}^2 - 12\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2v_1^2 - 18\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13} + 12\omega_9^3\omega_6\omega_{13}^2v_1^2 - 6\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2 - 36\omega_{18}\omega_9^2\omega_{22}\omega_{13}^2c_s^2 -$

$12\omega_9^2\omega_6\omega_{22}\omega_{13}^2v_1^2 - 6\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2c_s^2 - 36\omega_{18}\omega_9^3\omega_6\omega_{22}c_s^2 + 12\omega_{18}\omega_9^3\omega_6\omega_{13}v_1^2 - 18\omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13}c_s^2 + 36\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2c_s^2 +$
$18\omega_{18}\omega_9^3\omega_6^2\omega_{13}^2c_s^2 + 12\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} - 36\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2c_s^2 + 12\omega_{18}\omega_9^3\omega_6^2\omega_{13} + 36\omega_9^3\omega_6\omega_{13}^2c_s^2 - 36\omega_9^2\omega_6\omega_{22}\omega_{13}^2c_s^2 - 2\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2v_1^2 -$
$12\omega_{18}\omega_9^2\omega_{22}\omega_{13}^2v_1^2 - 18\omega_{18}\omega_9^2\omega_6^2\omega_{13}^2c_s^2 + 12\omega_{18}\omega_9^3\omega_{22}\omega_{13}^2v_1^2 - 12\omega_9^3\omega_6\omega_{13}^2 + 12\omega_{18}\omega_9^3\omega_6\omega_{22} - 12\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 - 40\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13}^2c_s^2 -$
$6\omega_{18}\omega_9^3\omega_6^2\omega_{13}^2 + 12\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2 - 6\omega_{18}\omega_9^2\omega_6^2\omega_{13}^2v_1^2 + 12\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13}^2 + 36\omega_{18}\omega_9^3\omega_{22}\omega_{13}^2c_s^2 - 12\omega_{18}\omega_9^3\omega_{22}\omega_{13}^2 - 12\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13}^2v_1^2 -$
$36\omega_{18}\omega_9^2\omega_6^2\omega_{22}c_s^2 + 12\omega_{18}\omega_9^2\omega_6^2\omega_{13}v_1^2 + 54\omega_{18}\omega_9^2\omega_6\omega_{22}\omega_{13}^2c_s^2 + 6\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2v_1^2 - 36\omega_{18}\omega_9^3\omega_{22}\omega_{13}c_s^2 - 12\omega_{18}\omega_9^2\omega_6^2\omega_{13} +$
$18\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13}v_1^2 + 36\omega_{18}\omega_9^2\omega_6^2\omega_{13}c_s^2 - 12\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 + 18\omega_{18}\omega_9^2\omega_6\omega_{22}\omega_{13}^2v_1^2 + 18\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2c_s^2 - \omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13}^2 + 6\omega_9^3\omega_6^2\omega_{13}^2 -$
$12\omega_{18}\omega_9^3\omega_{22}\omega_{13}v_1^2 - 18\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13} + 54\omega_{18}\omega_9^3\omega_6\omega_{22}\omega_{13}c_s^2 + 12\omega_{18}\omega_9^3\omega_6\omega_{13}^2 - 12\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 12\omega_{18}\omega_9^3\omega_6\omega_{13}^2v_1^2 +$
$5\omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13}^2c_s^2 + 2\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2 + 12\omega_{18}\omega_9^2\omega_{22}\omega_{13}^2 - 12\omega_{18}\omega_9^3\omega_6\omega_{13} - 36\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}c_s^2 - 36\omega_{18}\omega_9^3\omega_6^2\omega_{13}c_s^2 + 12\omega_{18}\omega_9^3\omega_6^2\omega_{22}v_1^2 -$
$6\omega_9^3\omega_6^2\omega_{13}^2v_1^2 + 12\omega_9^2\omega_6\omega_{22}\omega_{13}^2 + 6\omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13} + 18\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}v_1^2 + \omega_{18}\omega_9^3\omega_6^2\omega_{22}\omega_{13}^2v_1^2 - 36\omega_{18}\omega_9^3\omega_6\omega_{13}^2c_s^2 - 12\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}v_1^2 +$
$6\omega_{18}\omega_9^2\omega_6^2\omega_{13}^2 + 36\omega_{18}\omega_9^3\omega_6^2\omega_{22}c_s^2 - 12\omega_{18}\omega_9^3\omega_6^2\omega_{13}v_1^2 - 18\omega_9^3\omega_6^2\omega_{13}^2c_s^2 + 54\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}c_s^2$

$C_{17} = 24\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 6\omega_{18}\omega_9\omega_6^3\omega_{13} + 36\omega_{18}\omega_9^2\omega_6^3\omega_{22}v_1^2 + 6\omega_{18}\omega_9^2\omega_6^3\omega_{13}c_s^2 + 36\omega_{18}\omega_9\omega_6^3v_1^2 + 12\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2 + 6\omega_9\omega_6^3\omega_{22}\omega_{13}c_s^2 -$
$12\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{18}\omega_6^2\omega_{22}\omega_{13} - 24\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} + 6\omega_9^2\omega_6^3\omega_{13} + 12\omega_{18}\omega_9^2\omega_6^3 + 18\omega_{18}\omega_9^2\omega_6^3\omega_{13}v_1^2 + 12\omega_{18}\omega_9^2\omega_6^3\omega_{22}c_s^2 + 36\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 +$
$12\omega_{18}\omega_9\omega_6^3c_s^2 + 18\omega_9\omega_6^3\omega_{22}\omega_{13}v_1^2 - 6\omega_9\omega_6^3\omega_{22}\omega_{13} + 12\omega_{18}\omega_9^2\omega_6\omega_{22}c_s^2 - 12\omega_{18}\omega_9^2\omega_6^3\omega_{22} - 12\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2 - 36\omega_9\omega_6^2\omega_{22}\omega_{13}v_1^2 +$
$36\omega_9^2\omega_6^2\omega_{13}v_1^2 + 18\omega_{18}\omega_9^2\omega_6\omega_{22}\omega_{13}c_s^2 + 36\omega_{18}\omega_9^2\omega_6\omega_{22}v_1^2 - 36\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_1^2 - 12\omega_9\omega_6^2\omega_{22}\omega_{13}c_s^2 - 12\omega_9^2\omega_6^2\omega_{13} + 12\omega_9^2\omega_6^2\omega_{13}c_s^2 -$
$24\omega_{18}\omega_9^2\omega_6^2\omega_{22}c_s^2 - 36\omega_{18}\omega_9^2\omega_6^2\omega_{13}v_1^2 - 18\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}v_1^2 - 36\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 + 18\omega_{18}\omega_6^3\omega_{22}\omega_{13}v_1^2 + 36\omega_{18}\omega_9^2\omega_6^2v_1^2 - 6\omega_{18}\omega_9\omega_6^3\omega_{13}c_s^2 -$
$\omega_{18}\omega_9^2\omega_6^3\omega_{22}\omega_{13}c_s^2 + 12\omega_{18}\omega_9^2\omega_6^2\omega_{13} + 6\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13} + 12\omega_{18}\omega_9\omega_6^3\omega_{22} - 6\omega_{18}\omega_6^3\omega_{22}\omega_{13} - 12\omega_{18}\omega_9^2\omega_6^2\omega_{13}c_s^2 - 72\omega_{18}\omega_9^2\omega_6^2\omega_{22}v_1^2 -$
$6\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}c_s^2 + 12\omega_{18}\omega_9^2\omega_6^2c_s^2 + 6\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2 - 18\omega_{18}\omega_9\omega_6^3\omega_{13}v_1^2 - 12\omega_{18}\omega_9\omega_6^3\omega_{22}c_s^2 - 12\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2 - 6\omega_{18}\omega_9^2\omega_6^3\omega_{13} -$
$12\omega_{18}\omega_9\omega_6^2\omega_{22} + 24\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}c_s^2 - 6\omega_9^2\omega_6^3\omega_{13}c_s^2 - 36\omega_{18}\omega_9^2\omega_6^3v_1^2 - 12\omega_{18}\omega_9\omega_6^3 + 12\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13} - 36\omega_{18}\omega_6^2\omega_{22}\omega_{13}v_1^2 -$
$18\omega_9^2\omega_6^3\omega_{13}v_1^2 + 72\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}v_1^2 - 12\omega_{18}\omega_9^2\omega_6\omega_{22} + 12\omega_9\omega_6^2\omega_{22}\omega_{13} - 12\omega_{18}\omega_9^2\omega_6^3c_s^2 - 4\omega_{18}\omega_9^2\omega_6^2\omega_{22}\omega_{13}c_s^2 - 12\omega_{18}\omega_9^2\omega_{22}\omega_{13}c_s^2$

$C_{18} = 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_3^2v_2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{13}v_2^2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2^2c_s^2\omega_{20}v_1 +$
$\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_3^2v_2^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2v_1 + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 -$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2v_1 + 2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 +$
$\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 +$
$\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2 - 2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 -$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 - 2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 +$
$2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_3^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_2^2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_3^2v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2v_1^2 - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2v_1 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2v_1^2 -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_3^2v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_3^2v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_3^2v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_2c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2c_s^2\omega_{20}v_1^2 +$
$2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_2c_s^2\omega_{20}v_1^2 - 2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2v_1^2 + 2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 -$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_2c_s^2\omega_{20}v_1^2 - 2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} -$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2v_1 -$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 +$
$2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 +$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 + 2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2v_1 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 +$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_3^2v_2\omega_{20}v_1^2 +$
$2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_3^2v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2v_1 -$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2v_1 - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 +$
$\omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2v_1 -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_2c_s^2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_3^2v_2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_3^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_3^2v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_3^2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{13}v_2^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_3^2v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} + 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 +$

$\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} + 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2v_1^2 - \omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_3^2v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_2^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2v_1 - 2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 +$
$2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_3^2v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_3^2v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2v_1^2 +$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 -$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 +$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} +$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_3^2v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_3^2v_2^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} +$
$2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_2^2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 +$
$\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2 +$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2 - \omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_2c_s^2\omega_{20}v_1^2 -$
$2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_3^2v_2^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2^2c_s^2\omega_{20}v_1 +$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2 +$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2^2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_2^2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2v_1 +$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2v_1^2 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2 -$
$2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2^2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_2^2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2 +$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2v_1^2 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2 -$
$2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2^2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_2^2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2 +$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_2c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1$

$C_{19} = -4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_3^2v_2\omega_{20}v_1 - 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_3^2v_2\omega_{20}v_1 - 4\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_2^2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_3^2v_2^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2^2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_2c_s^2\omega_{20}v_1 -$
$4\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2v_1 - 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{13}v_2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2 -$
$4\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} + 4\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_3^2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} +$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{13}v_3^2v_2^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_3^2c_s^2\omega_{20} - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} +$
$4\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_2c_s^2\omega_{20}v_1 - 2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} + 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} + 4\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 -$
$4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2v_1 + 2\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_3^2v_2^2\omega_{20} - 4\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} +$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 - 4\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_3^2c_s^2\omega_{20} - 2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} -$
$\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{13}v_3^2c_s^2\omega_{20} + 4\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2v_1 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2 -$
$2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_3^2v_2^2\omega_{20} + 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20}v_1 + 4\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - 4\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 -$
$4\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_3^2v_2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{13}v_3^2v_2\omega_{20}v_1 -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2 - 4\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 -$
$2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2 - 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2c_s^2\omega_{20}v_1 - 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_3^2v_2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2 +$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} +$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_2^2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2^2c_s^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 - 4\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 +$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20} + 4\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2v_1 + 2\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} -$
$2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2 - 2\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_2^2c_s^2\omega_{20} +$
$4\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_2^2c_s^2\omega_{20} + 2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2 +$
$\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2 - 4\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + 4\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2v_1 + 2\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + 4\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} +$

$4\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 - 4\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2\omega_{20}v_1 - 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2v_1 +$
$4\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2^2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_3^2v_2^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} - 4\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 -$
$4\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + 4\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2v_2^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_2^2c_s^2\omega_{20} +$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_3^2c_s^2\omega_{20} +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2v_1 + 4\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_3^2c_s^2\omega_{20} -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2 + 4\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + 4\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{13}v_2c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} +$
$4\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_3^2v_2^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} +$
$4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{13}v_2^2c_s^2\omega_{20} + 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} -$
$\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_2^2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2 -$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2 + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2 + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2 - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} +$
$4\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_2c_s^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} + 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2 +$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - 4\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_3^2c_s^2\omega_{20} - 4\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_2^2c_s^2\omega_{20} - 4\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2^2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} +$
$\omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2v_1 + 4\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2v_1 +$
$2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2^2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2\omega_{20}v_1 + 4\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_3^2v_2\omega_{20}v_1 + 4\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + 4\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2 + 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_3^2v_2\omega_{20}v_1 - 4\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20}v_1 + 4\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2c_s^2\omega_{20} + 4\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} -$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2 + 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2 - 4\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 +$
$4\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2c_s^2 - 4\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{13}v_3^2v_2^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2v_1 -$
$2\omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 - 4\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 - 4\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 +$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_3^2v_2^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_3^2c_s^2\omega_{20} + 4\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_3^2v_2^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_3^2c_s^2\omega_{20} +$
$2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} + 4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} +$
$4\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_3^2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{13}v_3^2c_s^2\omega_{20}$

$C_{20} = 6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} - 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 12\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 -$
$12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} + 12\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2\omega_{20}v_1^2 + 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4 - 24\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2v_1^2 - 6\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2v_1^2 - 24\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 +$
$12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7c_s^4\omega_{20} - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20} + 24\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 -$
$6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2 - 6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 6\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 +$
$12\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_7v_2c_s^2\omega_{20}v_1 - 12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4 +$
$12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20} + 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 +$
$12\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 12\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_1^2 - 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} +$
$12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2v_1^2 + 12\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 - 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 +$
$24\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 24\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2v_2\omega_{20}v_1 + 24\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 +$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} -$
$24\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 + 12\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} - 6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_1^2 -$
$6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 + 6\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 24\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1 -$
$12\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} - 24\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1 - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 -$
$12\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 24\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 +$
$12\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2 - 24\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 12\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 +$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 + 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2c_s^2\omega_{20} - 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 - 24\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 +$
$24\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}v_1^2 -$
$6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7v_3^2c_s^2\omega_{20} -$
$12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_1^2 - 24\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} +$
$6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2 - 6\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} -$
$24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_7v_3^2v_2\omega_{20}v_1 - 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20} -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7v_3^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2c_s^2 -$
$12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1 -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 24\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 +$
$24\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}v_1^2 -$
$6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7v_3^2c_s^2\omega_{20} -$
$12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_1^2 - 24\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} +$
$6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^4\omega_{20} +$
$6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_1^2 + 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1 + 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 -$

$24\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 + 12\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} + 24\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 -$
$6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 -$
$24\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7v_2c_s^2\omega_{20}v_1 - 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2\omega_{20}v_1^2 + 24\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 -$
$24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 + 24\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 +$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_7v_3^2\omega_{20}v_1^2 - 12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} + 12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_1^2 -$
$24\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} + 12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7v_3^2c_s^2\omega_{20} -$
$12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 12\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 6\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4 +$
$10\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20} + 24\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7v_2c_s^2\omega_{20}v_1 + 24\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 +$
$12\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} + 12\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{20} +$
$24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20} - 12\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} +$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 - 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_7v_2c_s^2\omega_{20}v_1 + 12\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2c_s^2\omega_{20} +$
$24\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 24\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 -$
$24\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 - 6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} +$
$24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7v_3^2v_2\omega_{20}v_1 + 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2v_1^2 +$
$24\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 12\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 +$
$24\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 24\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_7c_s^2\omega_{20}v_1^2 +$
$12\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 - 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2v_1^2 + 12\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 +$
$12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 12\omega_8\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} + 12\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}v_1^2 -$
$12\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{20} - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 -$
$24\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 18\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20} - 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} +$
$24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_7v_2c_s^2\omega_{20}v_1 - 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7v_2c_s^2\omega_{20}v_1 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 -$
$12\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7c_s^4\omega_{20} - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 -$
$24\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2v_2\omega_{20}v_1 +$
$6\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1 - 18\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} +$
$12\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} + 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2v_1^2 - 12\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2c_s^2\omega_{20} +$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 + 12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 - 24\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2\omega_{20}v_1 +$
$12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_7v_3^2c_s^2\omega_{20} + 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} +$
$12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} - 6\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_1^2 + 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7v_2c_s^2\omega_{20}v_1 +$
$24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2\omega_{20}v_1^2 -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{20} + 12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4 + 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 +$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20} + 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7v_3^2\omega_{20}v_1^2 - 24\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 -$
$12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7c_s^4\omega_{20} + 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 - 6\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7v_3^2c_s^2\omega_{20} -$
$12\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 + 24\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} +$
$12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 24\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2v_2\omega_{20}v_1 + 24\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 +$
$12\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2c_s^2 -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7v_3^2c_s^2\omega_{20} - 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4 + 6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} -$
$12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_7c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 +$
$24\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 6\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} - 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_7v_3^2v_2\omega_{20}v_1 -$
$12\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 12\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_1^2 -$
$6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2v_1^2 + 12\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 6\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2 -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2\omega_{20}v_1^2 - 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 +$
$6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 + 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}\omega_7v_2c_s^2\omega_{20}v_1 -$
$12\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} - 24\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} -$
$24\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1 - 24\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7v_2c_s^2\omega_{20}v_1 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 -$
$6\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4 - 6\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 -$
$2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} + 12\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2v_1^2 - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 -$
$12\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2c_s^2\omega_{20} - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_7c_s^2\omega_{20}v_1^2 +$
$24\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 + 6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_7v_3^2c_s^2\omega_{20} +$
$24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_7v_3^2v_2\omega_{20}v_1 + 12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 24\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_7v_3^2v_2\omega_{20}v_1 -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4 - 6\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} -$
$24\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 + 12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 -$
$12\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}\omega_{13}\omega_7v_3^2c_s^2 - 12\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 12\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} +$
$12\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1$

$C_{21} = 2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 - 2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 + 2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20} +$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20} -$
$\omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 +$
$2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 +$
$\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{13}v_2\omega_{20}v_1^2 +$

$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2^2\omega_{20}v_1 -$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2v_1 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2v_1 + \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2v_1 - 2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_2\omega_{20}v_1^2 + 2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2v_1 - 2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_2\omega_{20}v_1^2 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2v_1^2 - 2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2c_s^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_2^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 +$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{13}v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20} +$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6c_s^2\omega_{20}v_1 -$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{13}v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}v_1 +$
$2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - 2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 +$
$2\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_2^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2 -$
$\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2 + 2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2\omega_{20}v_1^2 +$
$2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 -$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2 + \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{13}v_2^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} -$
$2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 -$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_2^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 +$
$2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2v_1^2 +$
$2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}v_2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 -$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2v_1^2 +$
$\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{13}v_2c_s^2\omega_{20} +$
$\omega_{14}\omega_8\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{13}v_2c_s^2\omega_{20} -$
$2\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{13}v_2\omega_{20}v_1^2 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2v_1 + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 +$
$2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20} +$
$2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2v_1^2 -$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2v_1 + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2v_1^2 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2v_1 +$
$\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6v_2\omega_{20}v_1^2 -$
$2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6\omega_{13}v_2\omega_{20}v_1^2 - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 +$
$2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20} + 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 -$
$\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}\omega_6v_2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} -$
$\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2 + 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_{13}v_2^2\omega_{20}v_1 -$
$2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}\omega_{13}v_2c_s^2 - 2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}v_2^2\omega_{20}v_1$

$C_{22} = 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3^2v_2^2\omega_{20}v_1 + 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_2^2c_s^2\omega_{20}v_1 + 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 - 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} -$
$12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_3^2c_s^2\omega_{20}v_1 + 6\omega_{17}\omega_8\omega_{18}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 - 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2v_1 - 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$6\omega_8\omega_5\omega_{18}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 + 12\omega_5\omega_{18}\omega_{15}\omega_7v_3^2c_s^2\omega_{20}v_1 - 12\omega_8\omega_{18}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 - 6\omega_8\omega_5\omega_{18}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2v_1 -$
$3\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7c_s^4\omega_{20}v_1 + 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 + 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$6\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_3v_2^2c_s^2\omega_{20} + 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 + 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2v_1 - 12\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} -$
$12\omega_8\omega_{18}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 + 12\omega_5\omega_{18}\omega_{15}\omega_7v_3^2v_2^2\omega_{20}v_1 + 12\omega_5\omega_{18}\omega_{15}\omega_7v_2^2c_s^2\omega_{20}v_1 - 6\omega_8\omega_5\omega_{18}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 - 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$6\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_2^2c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} + 6\omega_{17}\omega_8\omega_{18}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 - 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_2^2c_s^2\omega_{20}v_1 + 12\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} + 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2v_1 + 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 +$
$6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3^2c_s^2\omega_{20}v_1 + 12\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 + 3\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 + 12\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 -$
$12\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2c_s^2\omega_{20} + 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2v_1^2 - 6\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_3^2v_2^2\omega_{20}v_1 - 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} +$
$12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_2^2c_s^2v_1 - 6\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_2^2c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3^2c_s^2v_1 - 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3^2v_2^2v_1 -$
$12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 + 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2\omega_{20} + 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2 - 12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2v_1^2 + 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2c_s^2\omega_{20} - 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 - 12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 -$
$12\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 + 12\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 + 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2c_s^2\omega_{20} - 12\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 +$
$12\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 - 12\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2v_1 - 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 -$
$12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 - 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2v_1 - 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2c_s^2\omega_{20} - 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_3c_s^2v_1^2 +$
$12\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_3^2c_s^2v_1 + 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 - 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 + 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 -$
$6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_3^2v_2^2v_1 - 6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_3^2c_s^2v_1 + 12\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_3^2v_2^2v_1 - 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2v_1^2 - 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20}v_1 -$
$6\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_3^2c_s^2\omega_{20}v_1 + 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2 + 6\omega_8\omega_5\omega_{18}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2v_1 +$
$3\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 + 3\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 + 12\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 +$
$3\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} - 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 + 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 - 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2v_1^2 -$
$12\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 + 12\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 + 6\omega_{17}\omega_8\omega_{18}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} + 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 +$
$12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 + 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2 + 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 - 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2v_1 -$
$12\omega_8\omega_{18}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} - 3\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 - 12\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 - 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2v_1^2 +$
$6\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_3c_s^2\omega_{20}v_1^2 + 6\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_3v_2^2\omega_{20}v_1^2 + 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2v_1 - 12\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 -$
$3\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 + 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2v_1^2 + 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 +$

$12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2v_1^2 - 12\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 + 12\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 - 12\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 - 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 - 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2 - 12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2v_1^2 +$
$6\omega_8\omega_5\omega_{18}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 - 12\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2\omega_{20}v_1^2 + 12\omega_8\omega_{18}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 - 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1^2 + 12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_3^2v_2^2v_1 -$
$12\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_3v_2^2v_1^2 + 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2c_s^2 + 6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_3c_s^2v_1^2 - 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 +$
$6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_3v_2^2v_1^2 - 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_2^2c_s^2v_1 - 12\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_3c_s^2v_1^2 - 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3c_s^2\omega_{20}v_1^2 +$
$12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_3^2c_s^2v_1 + 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2\omega_{20}v_1^2 - 12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_3c_s^2v_1^2 + 12\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} +$
$12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2\omega_{20}v_1^2 - 6\omega_{17}\omega_8\omega_{18}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2 - 6\omega_{17}\omega_8\omega_{18}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_7v_3c_s^2\omega_{20}v_1^2 - 6\omega_{17}\omega_8\omega_{18}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 + 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3c_s^2\omega_{20}v_1^2 - 6\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} -$
$6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2v_1 - 12\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_3v_2^2c_s^2 - 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2\omega_{20}v_1^2 - 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 -$
$12\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2\omega_{20} - 6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_2^2c_s^2v_1 + 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3v_2^2v_1^2 - 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$12\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_7v_3c_s^2v_1^2 + 6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_7v_3v_2^2c_s^2 - 3\omega_{17}\omega_8\omega_5\omega_{18}\omega_6\omega_7v_3c_s^2\omega_{20}v_1^2 + 12\omega_{17}\omega_8\omega_5\omega_{15}\omega_7v_2^2c_s^2v_1 + 12\omega_8\omega_{18}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$12\omega_5\omega_{18}\omega_{15}\omega_7v_3c_s^2\omega_{20}v_1^2 - 6\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6\omega_7v_3^2c_s^2v_1 + 6\omega_8\omega_5\omega_{18}\omega_6\omega_7v_3v_2^2\omega_{20}v_1^2 + 12\omega_8\omega_{18}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_{18}\omega_{15}\omega_6\omega_7v_2^2c_s^2v_1$

$C_{23} = 2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3v_2^2\omega_{20}v_1 + 4\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2c_s^4\omega_{20} + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3c_s^2v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2 + 4\omega_8\omega_5\omega_{18}\omega_6^2v_3^2c_s^2\omega_{20} + 8\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6v_3v_2^2\omega_{20}v_1 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}c_s^4\omega_{20} - 8\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2 - 4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20}v_1 - 4\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3c_s^2\omega_{20}v_1 + 8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2v_3v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20} + 4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6v_3c_s^2\omega_{20}v_1 + 4\omega_8\omega_5\omega_{18}\omega_6^2v_3^2v_2^2\omega_{20} +$
$4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3v_2^2v_1 - 8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3v_2^2\omega_{20}v_1 - 8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6v_3^2c_s^2\omega_{20} - 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2 +$
$4\omega_5^2\omega_{18}\omega_{15}\omega_6v_2^2c_s^2\omega_{20} - 4\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2v_3^2c_s^2 + 4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6v_2^2c_s^2 - 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20} +$
$\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2v_2^2c_s^2\omega_{20} + 4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6v_3v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2v_3^2v_2^2 + 2\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2v_3c_s^2\omega_{20}v_1 -$
$\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} - 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2 - 2\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_2^2c_s^2\omega_{20} + 8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3v_2^2\omega_{20}v_1 - 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} +$
$4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6v_2^2c_s^2 - 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6v_3^2c_s^2\omega_{20} - 4\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2\omega_{20} + 2\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20} -$
$4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3v_2^2\omega_{20}v_1 - 4\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20} + 2\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} - 2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}c_s^4\omega_{20} - 8\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_2^2c_s^2\omega_{20} + 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2c_s^2\omega_{20} + 8\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20}v_1 - 4\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} +$
$4\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3c_s^2\omega_{20}v_1 - 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20} - 2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6v_3^2v_2^2\omega_{20} - 2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2c_s^4 +$
$4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2v_3c_s^2v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2 + 8\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3v_2^2v_1 + 8\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3v_2^2v_1 +$
$4\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2v_3c_s^2\omega_{20}v_1 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4 + 8\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3c_s^2v_1 + 8\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3c_s^2v_1 - 8\omega_8\omega_5\omega_{18}\omega_6^2v_3c_s^2\omega_{20}v_1 +$
$4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2v_3v_2^2v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20} + 2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2 + 2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2c_s^4 - 4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_2^2c_s^2 -$
$4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2\omega_{20} - 2\omega_8\omega_5^2\omega_{18}\omega_6^2v_3^2c_s^2\omega_{20} + 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2c_s^4 + 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2c_s^2\omega_{20} - 8\omega_8\omega_5\omega_{18}\omega_6^2v_3v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2v_3v_2^2\omega_{20}v_1 + 4\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_6^2v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4 -$
$2\omega_8\omega_5^2\omega_{18}\omega_6^2v_3^2v_2^2\omega_{20} - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} - 4\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2c_s^2\omega_{20} - 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4 - 8\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_3v_2^2v_1 -$
$8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3c_s^2\omega_{20}v_1 - 4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6c_s^4 - 2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_6^2v_3c_s^2\omega_{20}v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2c_s^2 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2v_3^2c_s^2\omega_{20} -$
$2\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2v_3^2v_2^2\omega_{20} - 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3v_2^2\omega_{20}v_1 + 8\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3c_s^2\omega_{20}v_1 + 4\omega_8\omega_5\omega_{18}\omega_6^2v_2^2c_s^2\omega_{20} + 4\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20} +$
$8\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_3c_s^2\omega_{20}v_1 + 4\omega_8\omega_5^2\omega_{18}\omega_6^2v_3c_s^2\omega_{20}v_1 - 4\omega_5\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20} - 8\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_3c_s^2v_1 + 4\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} +$
$4\omega_8\omega_5^2\omega_{18}\omega_6^2v_3v_2^2\omega_{20}v_1 - 4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2 + 8\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_3v_2^2\omega_{20}v_1 + 4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4 + \omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} +$
$8\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3v_2^2\omega_{20}v_1 - 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3c_s^2\omega_{20}v_1 + 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3^2c_s^2\omega_{20} -$
$2\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} - 4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3^2v_2^2 - \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_2^2c_s^2 - 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6v_2^2c_s^2\omega_{20} -$
$2\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6v_3^2v_2^2\omega_{20} + 2\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} + 4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6v_3^2v_2^2 + 4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6v_3^2c_s^2 - 4\omega_8\omega_5\omega_{18}\omega_6^2c_s^4\omega_{20} -$
$2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2v_2^2c_s^2 + 4\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20} + 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6v_3^2v_2^2 + 4\omega_5\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_6^2v_3^2c_s^2\omega_{20} +$
$\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_6^2v_3^2v_2^2\omega_{20} + 4\omega_5\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} + 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6c_s^4\omega_{20} + 4\omega_5^2\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3^2c_s^2\omega_{20} -$
$4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2v_2^2c_s^2\omega_{20} - 2\omega_8\omega_5^2\omega_{18}\omega_6^2v_2^2c_s^2\omega_{20} - 4\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2v_3^2v_2^2\omega_{20} - 2\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2c_s^4\omega_{20}$

$C_{24} = 4\omega_{17}\omega_{18}\omega_{15}\omega_6v_3\omega_{20}v_1^2 + 4\omega_5\omega_{18}\omega_{15}c_s^2\omega_{20}v_1 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6c_s^2v_1 - 2\omega_8\omega_5\omega_{18}\omega_{15}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}v_3c_s^2\omega_{20} -$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_3\omega_{20}v_1^2 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6v_3^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6v_3v_1^2 + 4\omega_8\omega_{18}\omega_6v_3^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_6c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}v_3c_s^2\omega_{20} - 4\omega_{17}\omega_{18}\omega_{15}\omega_6v_3v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_{15}v_3\omega_{20}v_1^2 - 4\omega_5\omega_{18}\omega_{15}v_3\omega_{20}v_1^2 + 4\omega_{17}\omega_8\omega_5\omega_{15}c_s^2v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_3v_1^2 -$
$4\omega_{17}\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6v_3c_s^2 - 4\omega_5\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}v_3^2\omega_{20}v_1 - 4\omega_8\omega_{18}\omega_6v_3c_s^2\omega_{20} +$
$2\omega_8\omega_5\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6v_3\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6v_3c_s^2 - \omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_{15}\omega_6v_3\omega_{20}v_1^2 -$
$4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20} - 4\omega_{17}\omega_{18}\omega_{15}\omega_6v_3c_s^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}v_3^2\omega_{20}v_1 + 4\omega_5\omega_{18}\omega_{15}\omega_6v_3\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6v_3v_1^2 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_3c_s^2 + 4\omega_8\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5\omega_{18}\omega_6c_s^2\omega_{20}v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6v_3v_1^2 - 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}v_3^2v_1 - 4\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20} +$
$2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6c_s^2v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6v_3\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_6v_3c_s^2\omega_{20} - 4\omega_{17}\omega_8\omega_5\omega_{15}v_3v_1^2 +$
$4\omega_{17}\omega_5\omega_{18}\omega_{15}v_3c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6c_s^2v_1 - \omega_{17}\omega_8\omega_5\omega_{18}\omega_6v_3\omega_{20}v_1^2 + 4\omega_{17}\omega_{18}\omega_{15}\omega_6c_s^2v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6v_3c_s^2 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}v_3^2v_1 -$
$4\omega_{17}\omega_5\omega_{18}\omega_{15}v_3^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_6v_3^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6v_3\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_{18}\omega_6c_s^2\omega_{20}v_1 + 4\omega_{18}\omega_{15}\omega_6v_3^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6c_s^2v_1 -$
$4\omega_{17}\omega_8\omega_5\omega_{15}v_3c_s^2 - 4\omega_8\omega_{18}\omega_{15}\omega_6v_3^2\omega_{20}v_1 + 4\omega_{17}\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}v_3\omega_{20}v_1^2 - 4\omega_5\omega_{18}\omega_{15}\omega_6v_3^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_3c_s^2\omega_{20} +$
$2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_{15}\omega_6v_3^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_3^2v_1 + 4\omega_{17}\omega_{18}\omega_{15}\omega_6v_3^2v_1 - \omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6v_3^2\omega_{20}v_1 -$
$4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}c_s^2v_1 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}v_3\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6v_3^2v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{18}\omega_{15}v_3c_s^2\omega_{20} -$
$4\omega_5\omega_{18}\omega_{15}v_3c_s^2\omega_{20} + 4\omega_5\omega_{18}\omega_{15}v_3^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{18}\omega_{15}v_3^2\omega_{20}v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6c_s^2\omega_{20}v_1 - 4\omega_8\omega_{18}\omega_6v_3\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6v_3^2v_1 +$
$\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20} + 4\omega_{17}\omega_5\omega_{18}\omega_{15}c_s^2v_1 - 2\omega_8\omega_5\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20} - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6v_3\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_6v_3^2\omega_{20}v_1 +$
$4\omega_8\omega_{18}\omega_6c_s^2\omega_{20}v_1 + 4\omega_5\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20} - 4\omega_{17}\omega_{18}\omega_{15}\omega_6v_3^2\omega_{20}v_1 + 4\omega_8\omega_{18}\omega_{15}\omega_6v_3\omega_{20}v_1^2 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}c_s^2\omega_{20}v_1 - 4\omega_{18}\omega_{15}\omega_6v_3\omega_{20}v_1^2 -$
$2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6v_3c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_6v_3^2\omega_{20}v_1 + 4\omega_{17}\omega_8\omega_5\omega_{15}v_3^2v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_6v_3^2\omega_{20}v_1 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}v_3v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_6v_3\omega_{20}v_1^2 -$

$4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_3^2 v_1 - 4\omega_{17}\omega_5\omega_{18}\omega_{15} v_3 c_s^2 + 4\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15} v_3\omega_{20} v_1^2 - 4\omega_8\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1 - \omega_{17}\omega_8\omega_5\omega_{18}\omega_6 v_3 c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5\omega_{18}\omega_6 v_3^2\omega_{20} v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6 v_3 c_s^2\omega_{20} + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_3 c_s^2 + 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_3^2\omega_{20} v_1 - 4\omega_{17}\omega_5\omega_{18}\omega_{15} v_3 v_1^2$

$C_{25} = 2\omega_8\omega_5\omega_{18}\omega_6 v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_{18}\omega_6 c_s^2\omega_{20} v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2 - 8\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2 v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 c_s^2 v_1^2 - \omega_{17}\omega_8\omega_5\omega_{18}\omega_6 v_2^2\omega_{20} v_1^2 - 4\omega_{17}\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2 + 4\omega_8\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2 c_s^2 - 4\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_2^2 v_1^2 - 8\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_3 v_2^2 v_1 - 4\omega_{17}\omega_8\omega_{18}\omega_6 v_3 c_s^2\omega_{20} v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_2^2\omega_{20} v_1^2 - 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1^2 - 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_6 v_3 v_2^2\omega_{20} v_1 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2\omega_{20} - 8\omega_{17}\omega_5\omega_{18}\omega_{15} v_3 v_2^2\omega_{20} v_1 + 2\omega_8\omega_5\omega_{18}\omega_{15} v_2^2\omega_{20} v_1^2 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2 + 8\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 - 4\omega_5\omega_{18}\omega_{15} v_2^2\omega_{20} v_1^2 - 4\omega_{17}\omega_8\omega_5\omega_{15} v_2^2 c_s^2 + 4\omega_{17}\omega_{18}\omega_{15}\omega_6 v_2^2\omega_{20} v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15} v_2^2 c_s^2\omega_{20} + 4\omega_5\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1^2 - 2\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2\omega_{20} v_1^2 - 4\omega_8\omega_5\omega_{18}\omega_6 v_3 v_2^2\omega_{20} v_1 + 4\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} - 4\omega_8\omega_5\omega_{18}\omega_6 v_3 c_s^2\omega_{20} v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_6 c_s^2\omega_{20} v_1^2 - 2\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2\omega_{20} v_1^2 + 4\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2\omega_{20} v_1^2 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2 v_1^2 + 8\omega_{17}\omega_5\omega_{18}\omega_{15} v_3 c_s^2 v_1 + 4\omega_{17}\omega_{18}\omega_{15}\omega_6 c_s^2 v_1^2 - 4\omega_{17}\omega_8\omega_5\omega_{15} c_s^2 v_1^2 - 4\omega_5\omega_{18}\omega_{15} c_s^2\omega_{20} v_1^2 - 4\omega_{17}\omega_8\omega_5\omega_{15} v_2^2 v_1^2 + 8\omega_{18}\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 + 8\omega_{17}\omega_5\omega_{18}\omega_{15} v_3 v_2^2 v_1 + 2\omega_8\omega_5\omega_{18}\omega_{15} c_s^2\omega_{20} v_1^2 + 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 c_s^2 v_1^2 - 8\omega_{17}\omega_5\omega_{18}\omega_{15} v_3 c_s^2\omega_{20} v_1 - 4\omega_8\omega_{18}\omega_6 v_2^2 c_s^2 + 8\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 8\omega_{17}\omega_5\omega_{18}\omega_6 v_3 v_2^2\omega_{20} v_1 + 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_6 v_3 c_s^2\omega_{20} v_1 + \omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2\omega_{20} v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_6 v_2^2\omega_{20} v_1^2 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 v_2^2 v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15} v_2^2\omega_{20} v_1^2 - 8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 - \omega_{17}\omega_8\omega_5\omega_{18}\omega_6 v_2^2 c_s^2\omega_{20} + 8\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 + 8\omega_8\omega_{18}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_8\omega_{18}\omega_{15}\omega_6 v_2^2\omega_{20} v_1^2 + 4\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 - 4\omega_{18}\omega_{15}\omega_6 v_2^2\omega_{20} v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2 v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 - 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_3 v_2^2 v_1 - 4\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1^2 + 4\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_8\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1^2 + 8\omega_8\omega_{18}\omega_6 v_3 v_2^2\omega_{20} v_1 + 8\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 8\omega_{17}\omega_{18}\omega_{15}\omega_6 v_3 v_2^2 v_1 + 8\omega_{17}\omega_{18}\omega_{15}\omega_6 v_3 c_s^2 v_1 - 8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15} c_s^2\omega_{20} v_1^2 - 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_3 c_s^2 v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6 v_2^2 c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{18}\omega_6 c_s^2\omega_{20} v_1^2 - 4\omega_{17}\omega_5\omega_{18}\omega_{15} c_s^2 v_1^2 - 8\omega_{17}\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 - 4\omega_8\omega_{18}\omega_6 c_s^2\omega_{20} v_1^2 + 8\omega_5\omega_{18}\omega_{15} v_3 v_2^2\omega_{20} v_1 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_2^2\omega_{20} v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2\omega_{20} - 4\omega_{17}\omega_8\omega_5\omega_{15} v_3 c_s^2\omega_{20} v_1 - 4\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_3 v_2^2\omega_{20} v_1 + 4\omega_{17}\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15} v_2^2\omega_{20} v_1^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1^2 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2 v_1^2 - 2\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} + 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2 c_s^2 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 - 4\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 - 4\omega_{17}\omega_8\omega_5\omega_{15} v_3 v_2^2\omega_{20} v_1 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_2^2 v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} c_s^2\omega_{20} v_1^2 + 8\omega_5\omega_{18}\omega_{15} v_3 c_s^2\omega_{20} v_1 - 4\omega_8\omega_{18}\omega_6 v_2^2\omega_{20} v_1^2 - 4\omega_{17}\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2 - 4\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_3 c_s^2 v_1 - 8\omega_{17}\omega_{18}\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 + \omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20}$

$C_{26} = 3\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}\omega_{13} c_s^2 - 6\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13} v_3^2 + 36\omega_{11}\omega_{18}^2\omega_9\omega_{22}\omega_{13} c_s^2 + 12\omega_{18}^2\omega_6^2\omega_{22} - 3\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} v_3^2 - 18\omega_{11}\omega_{18}^2\omega_6^2\omega_{13} c_s^2 - 12\omega_{11}\omega_{18}^2\omega_9\omega_6 - 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{13} + 5\omega_{18}^2\omega_9\omega_6^2\omega_{22}\omega_{13} + 18\omega_{11}\omega_9\omega_6^2\omega_{22}\omega_{13} c_s^2 + 36\omega_{18}^2\omega_9\omega_6^2\omega_{22} c_s^2 - 36\omega_{11}\omega_{18}\omega_9\omega_{22}\omega_{13} c_s^2 - 12\omega_{11}\omega_{18}^2\omega_6^2 + 6\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{13} v_3^2 + 54\omega_{18}^2\omega_9\omega_6\omega_{22}\omega_{13} c_s^2 - 12\omega_{18}^2\omega_9\omega_{22}\omega_{13} v_3^2 - 12\omega_{11}\omega_{18}^2\omega_9\omega_6^2 v_3^2 + 12\omega_{18}^2\omega_9\omega_6^2\omega_{22} v_3^2 - \omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}\omega_{13} - 12\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}\omega_{13} v_3^2 + 6\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}\omega_{13} + 54\omega_{18}^2\omega_9\omega_6\omega_{22}\omega_{13} c_s^2 - 12\omega_{18}^2\omega_9\omega_{22}\omega_{13} v_3^2 - 12\omega_{11}\omega_{18}^2\omega_9\omega_6^2 v_3^2 - 2\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{22} v_3^2 - 2\omega_{11}\omega_{18}^2\omega_9\omega_6^2 c_s^2 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2\omega_{20} v_1^2 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3^2 v_1 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_3^2 v_1 - 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2 v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{18}\omega_6 c_s^2\omega_{20} v_1^2 - 4\omega_{17}\omega_5\omega_{18}\omega_{15} c_s^2 v_1^2 - 8\omega_{17}\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 - 4\omega_8\omega_{18}\omega_6 c_s^2\omega_{20} v_1^2 + 8\omega_5\omega_{18}\omega_{15} v_3 v_2^2\omega_{20} v_1 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_2^2\omega_{20} v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2\omega_{20} - 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2 v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 - 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_3 v_2^2 v_1 - 4\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1^2 + 4\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_8\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1^2 + 8\omega_8\omega_{18}\omega_6 v_3 v_2^2\omega_{20} v_1 + 8\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 8\omega_{17}\omega_{18}\omega_{15}\omega_6 v_3 v_2^2 v_1 + 8\omega_{17}\omega_{18}\omega_{15}\omega_6 v_3 c_s^2 v_1 - 8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_{17}\omega_5\omega_{18}\omega_{15} c_s^2\omega_{20} v_1^2 - 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_3 c_s^2 v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6 v_2^2 c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{18}\omega_6 c_s^2\omega_{20} v_1^2 - 4\omega_{17}\omega_5\omega_{18}\omega_{15} c_s^2 v_1^2 - 8\omega_{17}\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 - 4\omega_8\omega_{18}\omega_6 c_s^2\omega_{20} v_1^2 + 8\omega_5\omega_{18}\omega_{15} v_3 v_2^2\omega_{20} v_1 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_2^2\omega_{20} v_1^2 + 2\omega_8\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2\omega_{20} - 4\omega_{17}\omega_8\omega_5\omega_{15} v_3 c_s^2\omega_{20} v_1 - 4\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_3 v_2^2\omega_{20} v_1 + 4\omega_{17}\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15} v_2^2\omega_{20} v_1^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 c_s^2\omega_{20} v_1^2 - 4\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_3 v_2^2 v_1 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6 v_3 v_2^2 c_s^2 v_1 - 2\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 - 4\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_3 c_s^2\omega_{20} v_1 - 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 + 4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} v_2^2 v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} c_s^2\omega_{20} v_1^2 + 8\omega_5\omega_{18}\omega_{15} v_3 c_s^2\omega_{20} v_1 - 4\omega_8\omega_{18}\omega_6 v_2^2\omega_{20} v_1^2 - 4\omega_{17}\omega_5\omega_{18}\omega_{15} v_2^2 c_s^2 - 4\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 v_3 c_s^2 v_1 - 8\omega_{17}\omega_{18}\omega_{15}\omega_6 v_3 v_2^2\omega_{20} v_1 + \omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 v_2^2 c_s^2\omega_{20}$

$C_{27} = 36\omega_{11}\omega_{18}\omega_6^3 v_3^2 - 36\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13} v_3^2 - \omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13} c_s^2 - 3\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} v_3^2 - 12\omega_{18}\omega_9\omega_6^2\omega_{22} c_s^2 - 6\omega_{11}\omega_{18}\omega_6^3\omega_{13} c_s^2 + 18\omega_{11}\omega_9\omega_6^3\omega_{22}\omega_{13} v_3^2 - 18\omega_{11}\omega_9\omega_6^2\omega_{22}\omega_{13} c_s^2 + 36\omega_{11}\omega_9\omega_6^2\omega_{13} v_3^2 - 18\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} - 12\omega_{11}\omega_{18}\omega_9\omega_{22}\omega_{13} c_s^2 - 36\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13} v_3^2 - 18\omega_{11}\omega_{18}\omega_6^3\omega_{13} v_3^2 + 6\omega_{11}\omega_9\omega_6^3\omega_{22}\omega_{13} c_s^2 - 54\omega_{11}\omega_9\omega_6^2\omega_{22}\omega_{13} v_3^2 + 12\omega_{11}\omega_9\omega_6^2\omega_{13} c_s^2 - 12\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13} c_s^2 + 6\omega_{11}\omega_{18}\omega_6^3\omega_{13} + 18\omega_{11}\omega_9\omega_6^2\omega_{22}\omega_{13} - 5\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} c_s^2 + 12\omega_{11}\omega_{18}\omega_6^3 c_s^2 - 12\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13} c_s^2 - 36\omega_{18}\omega_9\omega_6^2\omega_{22} v_3^2 + \omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} + 12\omega_{11}\omega_{18}\omega_9\omega_6^3 - 12\omega_{11}\omega_{18}\omega_9\omega_6^3 c_s^2 - 18\omega_{11}\omega_9\omega_6^3\omega_{13} v_3^2 - 12\omega_{11}\omega_9\omega_6\omega_{22}\omega_{13} + 5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13} + 12\omega_{18}\omega_6^3\omega_{22} - 12\omega_{18}\omega_9\omega_6^2\omega_{22} - 6\omega_{18}\omega_6^3\omega_{22}\omega_{13} + 54\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} v_3^2 + 36\omega_{11}\omega_{18}\omega_9\omega_6^2 v_3^2 - 6\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{13} - 5\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13} c_s^2 - 12\omega_{18}\omega_6^3\omega_{22} c_s^2 + 6\omega_{18}\omega_6^3\omega_{22}\omega_{13} c_s^2 - 12\omega_{11}\omega_{18}\omega_9\omega_6^2 + 12\omega_{18}\omega_9\omega_6^3\omega_{22} c_s^2 + 18\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{13} v_3^2 + 6\omega_{11}\omega_9\omega_6^3\omega_{13} + 12\omega_{11}\omega_9\omega_6\omega_{22}\omega_{13} c_s^2 - 36\omega_{18}\omega_6^3\omega_{22} v_3^2 + 18\omega_{18}\omega_6^3\omega_{22}\omega_{13} v_3^2 + 12\omega_{18}\omega_9\omega_6^2\omega_{22} + 36\omega_{18}\omega_9\omega_6^3\omega_{22} v_3^2 + 18\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} c_s^2 + 12\omega_{11}\omega_{18}\omega_9\omega_6^2 c_s^2 - 15\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13} v_3^2 + 36\omega_{11}\omega_9\omega_6\omega_{22}\omega_{13} v_3^2 + 6\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{13} c_s^2 + 12\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13} - 6\omega_{11}\omega_9\omega_6^3\omega_{22}\omega_{13} - 12\omega_{11}\omega_9\omega_6^2\omega_{13} - 36\omega_{11}\omega_{18}\omega_9\omega_6^3 v_3^2 - 6\omega_{11}\omega_9\omega_6^3\omega_{13} c_s^2 + 18\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13} c_s^2 + 12\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13} - 12\omega_{11}\omega_{18}\omega_6^3$

$C_{28} = -72\omega_{18}\omega_6^2 v_3^2 - 12\omega_{18}^2\omega_6^2 v_3^4 - 12\omega_{18}^2\omega_6^2 v_3^2 c_s^2 - 3\omega_{18}^2\omega_6^3 c_s^4 - 36\omega_6^3 v_3^2 - 72\omega_{18}\omega_6^3 v_3^2 c_s^2 - 6\omega_{18}\omega_6^3 c_s^2 + 12\omega_{18}^2\omega_6 c_s^2 + 72\omega_{18}\omega_6 v_3^2 c_s^2 + 3\omega_{18}^2\omega_6^3 v_3^4 + 30\omega_{18}\omega_6^3 v_3^2 + 24\omega_{18}\omega_6 c_s^4 + 24\omega_{18}\omega_6^2 c_s^2 - 216\omega_6^2 v_3^2 c_s^2 + 24\omega_{18}^2 c_s^4 + 72\omega_6^2 v_3^2 + 24\omega_{18}^2\omega_6^2 c_s^4 - 30\omega_{18}\omega_6^3 v_3^4 - 24\omega_{18}\omega_6 c_s^2 + 144\omega_{18}\omega_6^2 v_3^2 c_s^2 - 48\omega_{18}^2\omega_6 c_s^4 - 3\omega_{18}^2\omega_6^3 v_3^2 + 6\omega_{18}^2\omega_6^3 v_3^2 c_s^2 - 72\omega_6^2 v_3^4 - 8\omega_{18}^2\omega_6^2 c_s^2 - 24\omega_{18}\omega_6^2 c_s^4 + 12\omega_{18}^2\omega_6^2 v_3^2 - 36\omega_{18}^2\omega_6 v_3^2 c_s^2 + 72\omega_{18}\omega_6^2 v_3^4 + 108\omega_6^3 v_3^2 c_s^2 + 6\omega_{18}\omega_6^3 c_s^4 + \omega_{18}^2\omega_6^3 c_s^2 + 36\omega_6^3 v_3^4$

2.5.4 Conservation of momentum: ρv_2

$$v_2 \frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{\delta_l v_2 v_1}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\rho\delta_l v_2}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho\delta_l v_1}{\delta_t}\frac{\partial v_2}{\partial x_1} + (v_2^2 + c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2\rho\delta_l v_2}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\delta_l v_3 v_2}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{\rho\delta_l v_3}{\delta_t}\frac{\partial v_2}{\partial x_3} + \frac{\rho\delta_l v_2}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_5)\frac{\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} +$$

$$(-2+6v_2^2+4c_s^2+\omega_{10}-2\omega_{10}c_s^2-3\omega_{10}v_2^2)\frac{\delta_l^2}{\delta_t\omega_{10}}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + (2-\omega_{10})\frac{3\rho\delta_l^2 v_2}{\delta_t\omega_{10}}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-2+\omega_7)\frac{\delta_l^2 c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} +$$

$$
\begin{aligned}
&(-2+\omega_7)\frac{\delta_l^2 c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_5)\frac{\rho\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial^2 v_2}{\partial x_1^2} + (-2+\omega_5)\frac{\rho\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_2} + \\
&(-2+2v_2^2+6c_s^2+\omega_{10}-3\omega_{10}c_s^2-\omega_{10}v_2^2)\frac{\delta_l^2 v_2}{2\delta_t\omega_{10}}\frac{\partial^2\rho}{\partial x_2^2} + (-2+6v_2^2+2c_s^2+\omega_{10}-\omega_{10}c_s^2-3\omega_{10}v_2^2)\frac{\rho\delta_l^2}{2\delta_t\omega_{10}}\frac{\partial^2 v_2}{\partial x_2^2} + \\
&(-2+\omega_7)\frac{\rho\delta_l^2 c_s^2}{2\delta_t\omega_7}\frac{\partial^2 v_3}{\partial x_2\partial x_3} + (-2+\omega_7)\frac{\rho\delta_l^2 c_s^2}{2\delta_t\omega_7}\frac{\partial^2 v_2}{\partial x_3^2} + (-1+3c_s^2+v_1^2)\frac{\delta_l^3 v_2 v_1}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+c_s^2+3v_1^2)\frac{\rho\delta_l^3 v_2}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + \\
&C_1\frac{\rho\delta_l^3 v_1}{6\omega_5\omega_{12}\delta_t}\frac{\partial^3 v_2}{\partial x_1^3} + (-12+12\omega_5-\omega_5^2)\frac{\delta_l^3 c_s^4}{6\omega_5^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} - \frac{\rho\delta_l^3 v_2 c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + C_2\frac{\rho\delta_l^3 v_2}{12\omega_5\omega_{15}\delta_t\omega_{10}^2}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_3\frac{\delta_l^3}{12\delta_t\omega_{10}^2}\frac{\partial^3\rho}{\partial x_2^3} + \\
&(-24+5\omega_{10}^2c_s^2+11\omega_{10}^2v_2^2+60v_2^2+36c_s^2-4\omega_{10}^2+24\omega_{10}-36\omega_{10}c_s^2-60\omega_{10}v_2^2)\frac{\rho\delta_l^3 v_2}{6\delta_t\omega_{10}^2}\frac{\partial^3 v_2}{\partial x_2^3} - \frac{\rho\delta_l^3 v_2 c_s^2}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + \\
&C_4\frac{\rho\delta_l^3 v_2}{12\delta_t\omega_{16}\omega_{10}^2\omega_7}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{\rho\delta_l^3 v_2 c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + (-12-\omega_7^2+12\omega_7)\frac{\delta_l^3 c_s^4}{6\delta_t\omega_7^2}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} - \frac{\rho\delta_l^3 v_2 c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + \\
&(-1+3c_s^2+v_3^2)\frac{\delta_l^3 v_3 v_2}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_5\frac{\rho\delta_l^3 v_3}{6\omega_{19}\delta_t\omega_7}\frac{\partial^3 v_2}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{\rho\delta_l^3 v_2}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + \\
&(-2c_s^2-6v_1^2-3\omega_9v_1^4+24c_s^2v_1^2-\omega_9c_s^4+3\omega_9v_1^2+\omega_9c_s^2-12\omega_9c_s^2v_1^2+2c_s^4+6v_1^4)\frac{\delta_l^4 v_2}{24\omega_9\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + \\
&(-4+6c_s^2+10v_1^2+2\omega_9-5\omega_9v_1^2-3\omega_9c_s^2)\frac{\rho\delta_l^4 v_2 v_1}{12\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_6\frac{\rho\delta_l^4}{24\omega_5^3\omega_{12}^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^4} + C_7\frac{\delta_l^4 c_s^2 v_1}{12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + \\
&C_8\frac{\rho\delta_l^4 c_s^2}{12\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}\delta_t\omega_{10}}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + \\
&(3\omega_9\omega_{12}c_s^2+\omega_9\omega_{12}v_1^2+3\omega_9-\omega_{12}-3\omega_9v_1^2-9\omega_9c_s^2+3\omega_{12}c_s^2-\omega_9\omega_{12}+\omega_{12}v_1^2)\frac{\rho\delta_l^4 v_2 v_1}{12\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + \\
&C_9\frac{\delta_l^4 v_2 c_s^2}{12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\delta_t\omega_{10}^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{10}\frac{\rho\delta_l^4 c_s^2}{12\omega_5^3\omega_{21}\omega_{15}\omega_{12}\delta_t\omega_{10}^2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{11}\frac{\rho\delta_l^4}{12\omega_5^3\omega_{15}^2\delta_t\omega_{10}^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{12}\frac{\delta_l^4 v_2}{12\delta_t\omega_{10}^3}\frac{\partial^4\rho}{\partial x_2^4} + \\
&C_{13}\frac{\rho\delta_l^4}{12\delta_t\omega_{10}^3}\frac{\partial^4 v_2}{\partial x_2^4} + (3\omega_{13}c_s^2+\omega_{13}v_1^2+3\omega_9+3\omega_9\omega_{13}c_s^2-\omega_9\omega_{13}-3\omega_9v_1^2+\omega_9\omega_{13}v_1^2-9\omega_9c_s^2-\omega_{13})\frac{\rho\delta_l^4 v_2 v_1}{12\omega_9\delta_t\omega_{13}}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} \\
&+ C_{14}\frac{\rho\delta_l^4 c_s^4}{12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\delta_t\omega_{16}\omega_{10}\omega_7^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{15}\frac{\rho\delta_l^4}{12\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_{16}\frac{\delta_l^4}{12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\delta_t\omega_7\omega_{20}}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} \\
&+ C_{17}\frac{\rho\delta_l^4}{4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\delta_t\omega_7\omega_{20}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{18}\frac{\rho\delta_l^4}{4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\delta_t\omega_7^2\omega_{20}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2} + C_{19}\frac{\rho\delta_l^4 v_3}{2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\delta_t\omega_7\omega_{20}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + \\
&C_{20}\frac{\delta_l^4}{2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C_{21}\frac{\rho\delta_l^4}{12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{22}\frac{\rho\delta_l^4 v_2}{\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{23}\frac{\rho\delta_l^4}{2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{24}\frac{\delta_l^4 v_2 c_s^2}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{25}\frac{\rho\delta_l^4 c_s^2}{12\omega_{19}\delta_t\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + \\
&(3\omega_{11}+\omega_{18}v_3^2-9\omega_{11}c_s^2-\omega_{11}\omega_{18}+3\omega_{18}c_s^2-3\omega_{11}v_3^2-\omega_{18}+\omega_{11}\omega_{18}v_3^2+3\omega_{11}\omega_{18}c_s^2)\frac{\rho\delta_l^4 v_3 v_2}{12\omega_{11}\omega_{18}\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + \\
&C_{26}\frac{\delta_l^4 v_3 c_s^2}{12\omega_{11}\omega_{19}^2\delta_t\omega_{16}\omega_{10}\omega_7^2\omega_{23}}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + \\
&(3\omega_{11}-9\omega_{11}c_s^2+3\omega_{11}\omega_{19}c_s^2-3\omega_{11}v_3^2+\omega_{11}\omega_{19}v_3^2+3\omega_{19}c_s^2-\omega_{19}-\omega_{11}\omega_{19}+\omega_{19}v_3^2)\frac{\rho\delta_l^4 v_3 v_2}{12\omega_{11}\omega_{19}\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&C_{27}\frac{\rho\delta_l^4 c_s^2}{12\omega_{11}\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + \\
&(-12\omega_{11}v_3^2c_s^2-2c_s^2+\omega_{11}c_s^2+3\omega_{11}v_3^2-6v_3^2-3\omega_{11}v_3^4+24v_3^2c_s^2+6v_3^4+2c_s^4-\omega_{11}c_s^4)\frac{\delta_l^4 v_2}{24\omega_{11}\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + \\
&C_{28}\frac{\rho\delta_l^4}{24\omega_{19}^2\delta_t\omega_7^3}\frac{\partial^4 v_2}{\partial x_3^4} + (-4+2\omega_{11}+6c_s^2-3\omega_{11}c_s^2-5\omega_{11}v_3^2+10v_3^2)\frac{\rho\delta_l^4 v_3 v_2}{12\omega_{11}\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$C_1 = 6-18c_s^2-3\omega_5-6v_1^2-3\omega_{12}-\omega_5\omega_{12}v_1^2+\omega_5\omega_{12}-3\omega_5\omega_{12}c_s^2+9\omega_5c_s^2+9\omega_{12}c_s^2+3\omega_5v_1^2+3\omega_{12}v_1^2$$

$$C_2 = 12\omega_5\omega_{10}-36\omega_{10}^2c_s^2-12\omega_{10}^2v_2^2-3\omega_5\omega_{15}\omega_{10}^2v_2^2-11\omega_5\omega_{15}\omega_{10}^2c_s^2+6\omega_5\omega_{15}\omega_{10}-6\omega_{15}\omega_{10}^2+3\omega_5\omega_{15}\omega_{10}^2-12\omega_5\omega_{10}^2+12\omega_5\omega_{10}^2v_2^2+36\omega_5\omega_{10}^2c_s^2-12\omega_5\omega_{10}v_2^2-36\omega_5\omega_{10}c_s^2+12\omega_{10}^2-12\omega_5\omega_{15}+18\omega_{15}\omega_{10}^2c_s^2+6\omega_{15}\omega_{10}^2v_2^2+12\omega_5\omega_{15}v_2^2-6\omega_5\omega_{15}\omega_{10}v_2^2-18\omega_5\omega_{15}\omega_{10}c_s^2+36\omega_5\omega_{15}c_s^2$$

$$C_3 = -\omega_{10}^2c_s^2-7\omega_{10}^2v_2^2-36v_2^2-12c_s^2-12\omega_{10}c_s^4-36\omega_{10}v_2^4-144\omega_{10}v_2^2c_s^2+144v_2^2c_s^2+24\omega_{10}^2v_2^2c_s^2+36v_2^4+12c_s^4+\omega_{10}^2c_s^4+7\omega_{10}^2v_2^4+12\omega_{10}c_s^2+36\omega_{10}v_2^2$$

$$C_4 = -36\omega_{10}^2c_s^2-12\omega_{10}^2v_2^2-11\omega_{16}\omega_{10}^2\omega_7c_s^2-36\omega_{10}\omega_7c_s^2-12\omega_{10}\omega_7v_2^2-3\omega_{16}\omega_{10}^2\omega_7v_2^2-12\omega_{10}^2\omega_7+3\omega_{16}\omega_{10}^2\omega_7+36\omega_{16}\omega_7c_s^2+12\omega_{16}\omega_7v_2^2+18\omega_{16}\omega_{10}^2c_s^2+6\omega_{16}\omega_{10}^2v_2^2-6\omega_{16}\omega_{10}^2+12\omega_{10}^2+6\omega_{16}\omega_{10}\omega_7+12\omega_{10}\omega_7-6\omega_{16}\omega_{10}\omega_7v_2^2+12\omega_{10}^2\omega_7v_2^2+36\omega_{10}^2\omega_7c_s^2-18\omega_{16}\omega_{10}\omega_7c_s^2-12\omega_{16}\omega_7$$

$$C_5 = 6-18c_s^2+9\omega_7c_s^2+3\omega_7v_3^2-6v_3^2+9\omega_{19}c_s^2-3\omega_{19}-\omega_{19}\omega_7v_3^2+\omega_{19}\omega_7-3\omega_{19}\omega_7c_s^2-3\omega_7+3\omega_{19}v_3^2$$

$$C_6 = 6\omega_5^3\omega_{12}c_s^4+72\omega_5^2v_1^2-72\omega_5^3\omega_{12}c_s^2v_1^2-3\omega_5^3\omega_{12}^2v_1^2-30\omega_5^3\omega_{12}v_1^4-36\omega_5\omega_{12}^2c_s^2v_1^2+\omega_5^3\omega_{12}^2c_s^2-72\omega_5^2\omega_{12}v_1^2+12\omega_5\omega_{12}^2c_s^2+24\omega_5^2\omega_{12}^2c_s^4-36\omega_5^3v_1^2+108\omega_5^3c_s^2v_1^2+24\omega_5^2\omega_{12}c_s^2-12\omega_5^2\omega_{12}^2v_1^4+24\omega_5\omega_{12}c_s^4+144\omega_5^2\omega_{12}c_s^2v_1^2+36\omega_5^3v_1^4-8\omega_5^2\omega_{12}^2c_s^2+72\omega_5^2\omega_{12}v_1^4-48\omega_5\omega_{12}^2c_s^4+12\omega_5^2\omega_{12}^2v_1^2-24\omega_5\omega_{12}c_s^2-12\omega_5^2\omega_{12}^2c_s^2v_1^2-24\omega_5^2\omega_{12}c_s^4+3\omega_5^3\omega_{12}^2v_1^4-6\omega_5^3\omega_{12}c_s^2-72\omega_5^2v_1^4+6\omega_5^3\omega_{12}^2c_s^2v_1^2-216\omega_5^2c_s^2v_1^2+24\omega_{12}^2c_s^4-3\omega_5^3\omega_{12}^2c_s^4+72\omega_5\omega_{12}c_s^2v_1^2+30\omega_5^3\omega_{12}v_1^2$$

$C_7 = 18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10}c_s^2 - 12\omega_5\omega_{15}\omega_9\omega_{12}^2\omega_{10}v_1^2 + 12\omega_5^2\omega_9\omega_{12}^2\omega_{10} + 12\omega_{21}\omega_{15}\omega_{12}^2\omega_{10} + 12\omega_5\omega_{21}\omega_{12}^2\omega_{10} + 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2c_s^2 -$
$\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10} + 6\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 15\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}c_s^2 + 6\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10}v_1^2 - 36\omega_5\omega_{15}\omega_9\omega_{12}^2\omega_{10}c_s^2 + 6\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2v_1^2 - 12\omega_5^2\omega_9\omega_{12}^2 -$
$5\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}v_1^2 + 18\omega_5^2\omega_{15}\omega_9\omega_{12}^2\omega_{10}c_s^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10}v_1^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}v_1^2 - 6\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10} - 3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2 -$
$36\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 18\omega_5\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}v_1^2 + 12\omega_5\omega_{15}\omega_9\omega_{12}^2\omega_{10} - 36\omega_5^2\omega_{21}\omega_{12}^2c_s^2 + 6\omega_5^2\omega_{15}\omega_9\omega_{12}^2\omega_{10}v_1^2 + 12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} -$
$36\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10}c_s^2 + 12\omega_5^2\omega_{21}\omega_{12}^2 - 6\omega_5^2\omega_{15}\omega_9\omega_{12}^2\omega_{10} - 36\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}c_s^2 - 9\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2 +$
$54\omega_5\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}c_s^2 + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10} + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10} - 12\omega_5^2\omega_{21}\omega_{12}^2v_1^2 - 12\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10} - 6\omega_5^2\omega_{15}\omega_9\omega_{12}^2v_1^2 +$
$\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}v_1^2 + 18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2 - 36\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}c_s^2 - 36\omega_5\omega_{21}\omega_{12}^2\omega_{10}c_s^2 + 6\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 18\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 +$
$12\omega_5\omega_9\omega_{12}^2\omega_{10}v_1^2 - 12\omega_5^2\omega_{21}\omega_{12}^2\omega_{10} + 36\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}c_s^2 + 12\omega_5^2\omega_{21}\omega_{12}^2\omega_{10}v_1^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10} - 36\omega_5^2\omega_9\omega_{12}^2\omega_{10}c_s^2 - 12\omega_5\omega_9\omega_{12}^2\omega_{10} +$
$3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}c_s^2 - 18\omega_5^2\omega_{15}\omega_9\omega_{12}^2c_s^2 - 12\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}v_1^2 + 54\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_{21}\omega_{12}^2\omega_{10}v_1^2 + 36\omega_5\omega_9\omega_{12}^2\omega_{10}c_s^2 -$
$6\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2 + 12\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}v_1^2 + 36\omega_5^2\omega_{21}\omega_{12}^2\omega_{10}c_s^2 - 12\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10} - 12\omega_5^2\omega_9\omega_{12}^2\omega_{10}v_1^2 + 5\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2\omega_{10} +$
$12\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2 - 6\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 36\omega_5^2\omega_9\omega_{12}^2c_s^2 + 36\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5^2\omega_9\omega_{12}^2v_1^2 - 18\omega_5\omega_{21}\omega_{15}\omega_{12}^2\omega_{10} + 3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}$

$C_8 = -\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10}c_s^2 + 6\omega_5^3\omega_{15}\omega_9\omega_{12} + 18\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_1^2 + 12\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10} + 18\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2 -$
$12\omega_5^3\omega_{21}\omega_{12}\omega_{10} - 54\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10}v_1^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10} + 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}c_s^2 + 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5^3\omega_9\omega_{12}c_s^2 -$
$15\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10}v_1^2 + 36\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10}v_1^2 + 18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10} - 3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2 + 36\omega_5^2\omega_{15}\omega_9\omega_{10}v_1^2 + 12\omega_5^2\omega_9\omega_{12}\omega_{10}c_s^2 -$
$36\omega_5^2\omega_{21}\omega_{12}\omega_{10}v_1^2 - 6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10} - 12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10}c_s^2 + 36\omega_5^3\omega_9\omega_{12}v_1^2 - 5\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 -$
$5\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 36\omega_5^2\omega_9\omega_{12}\omega_{10}v_1^2 + 12\omega_5^2\omega_{21}\omega_{12}\omega_{10} + 12\omega_5^2\omega_{15}\omega_9\omega_{10}c_s^2 - 12\omega_5^2\omega_{21}\omega_{12}\omega_{10}c_s^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10} -$
$12\omega_5^3\omega_9\omega_{12}\omega_{10}c_s^2 - 18\omega_5^3\omega_{15}\omega_9\omega_{10}v_1^2 + 12\omega_5^3\omega_9\omega_{12}\omega_{10} + 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10} - 12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 + 36\omega_5^3\omega_{21}\omega_{12}\omega_{10}v_1^2 -$
$6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{10} - 36\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}v_1^2 + 18\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{10}v_1^2 - 6\omega_5^3\omega_{15}\omega_9\omega_{12}c_s^2 + 6\omega_5^3\omega_{15}\omega_9\omega_{10} + 12\omega_5^3\omega_{21}\omega_{12} +$
$18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}c_s^2 - 6\omega_5^3\omega_{15}\omega_9\omega_{10}c_s^2 - 36\omega_5^3\omega_9\omega_{12}\omega_{10}v_1^2 + 12\omega_5^3\omega_{21}\omega_{12}\omega_{10}c_s^2 - 36\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{10}c_s^2 -$
$12\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 - 18\omega_5^3\omega_{15}\omega_9\omega_{12}v_1^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 - 12\omega_5^3\omega_{21}\omega_{12}c_s^2 - 12\omega_5^2\omega_9\omega_{12}\omega_{10} - 12\omega_5^3\omega_9\omega_{12} -$
$12\omega_5^2\omega_{15}\omega_9\omega_{10} + 54\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}v_1^2 - 36\omega_5^3\omega_{21}\omega_{12}v_1^2 + 5\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10} + \omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}$

$C_9 = 12\omega_5^2\omega_{21}\omega_{12}\omega_{10}^2 + 18\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3v_2^2 + 54\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3c_s^2 - 6\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}^3 - 12\omega_5^2\omega_{15}\omega_{12}\omega_{10}^3v_2^2 - 18\omega_5^2\omega_{15}^2\omega_{10}^3c_s^2 - 6\omega_5^2\omega_{15}^2\omega_{10}^3v_2^2 -$
$36\omega_5^2\omega_{15}\omega_{12}\omega_{10}^3c_s^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10} + 12\omega_5\omega_{15}\omega_{12}\omega_{10}^3v_2^2 + 36\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}c_s^2 + 6\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}^2 + 12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}v_2^2 + 12\omega_5\omega_{21}\omega_{15}^2\omega_{10}^2 -$
$12\omega_5^2\omega_{21}\omega_{12}\omega_{10}^3 + 36\omega_5\omega_{15}\omega_{12}\omega_{10}^3c_s^2 - 36\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2c_s^2 + 54\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 + 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2v_2^2 - 12\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2v_2^2 + 6\omega_5^2\omega_{15}^2\omega_{10}^3 -$
$12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}v_2^2 + 36\omega_5^2\omega_{15}\omega_{12}\omega_{10}^2c_s^2 + 12\omega_5^2\omega_{15}\omega_{12}\omega_{10}^2v_2^2 - 36\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}c_s^2 - 18\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3 - 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2 +$
$12\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2 - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_5\omega_{15}\omega_{12}\omega_{10}^3 + 12\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3v_2^2 - 6\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3v_2^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3c_s^2 +$
$36\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3c_s^2 - 12\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3 + 6\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3 + 12\omega_5\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3 + 12\omega_5\omega_{15}^2\omega_{10}^3v_2^2 + 18\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}^3c_s^2 + 6\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}^3v_2^2 +$
$36\omega_5\omega_{15}^2\omega_{10}^3c_s^2 - 12\omega_5\omega_{15}^2\omega_{10}^3 - 40\omega_5\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3c_s^2 - 36\omega_5^2\omega_{21}\omega_{12}\omega_{10}^2c_s^2 + 12\omega_5\omega_{15}^2\omega_{12}\omega_{10}^3 - 12\omega_5^2\omega_{21}\omega_{12}\omega_{10}^2v_2^2 + 2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2 -$
$12\omega_5\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3v_2^2 - 2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2v_2^2 - 18\omega_5\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2 - 6\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2c_s^2 + 12\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3 - 6\omega_5^2\omega_{21}\omega_{15}^2\omega_{10}^2 -$
$\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3 + 12\omega_5\omega_{21}\omega_{12}\omega_{10}^3 - 36\omega_5\omega_{15}^2\omega_{12}\omega_{10}^3c_s^2 - 12\omega_5\omega_{15}^2\omega_{12}\omega_{10}^3v_2^2 + 18\omega_5\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2v_2^2 + 12\omega_5^2\omega_{21}\omega_{12}\omega_{10}^3v_2^2 -$
$36\omega_5\omega_{21}\omega_{15}^2\omega_{10}^2c_s^2 + 12\omega_5^2\omega_{15}\omega_{12}\omega_{10}^3 - 12\omega_5\omega_{21}\omega_{15}^2\omega_{10}^2v_2^2 + 36\omega_5^2\omega_{21}\omega_{12}\omega_{10}^3c_s^2 + 54\omega_5\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^2c_s^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 -$
$6\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}^2v_2^2 - 18\omega_5^2\omega_{15}^2\omega_{12}\omega_{10}^2c_s^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}v_2^2 - 12\omega_5^2\omega_{15}\omega_{12}\omega_{10}^2 + 12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10} + 5\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3c_s^2 -$
$36\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3c_s^2 + 18\omega_5^2\omega_{21}\omega_{15}^2\omega_{10}^2c_s^2 - 12\omega_5\omega_{21}\omega_{12}\omega_{10}^3v_2^2 - 36\omega_5\omega_{21}\omega_{12}\omega_{10}^3c_s^2 + 6\omega_5^2\omega_{21}\omega_{15}^2\omega_{10}^2v_2^2 - 12\omega_{21}\omega_{15}\omega_{12}\omega_{10}^3v_2^2 + \omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\omega_{10}^3v_2^2$

$C_{10} = 24\omega_5^2\omega_{21}\omega_{12}\omega_{10}^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_{10}c_s^2 + 18\omega_5^3\omega_{21}\omega_{15}\omega_{10}v_2^2 + 12\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10} - 12\omega_5^3\omega_{12}\omega_{10} + 12\omega_5^3\omega_{21}\omega_{12}\omega_{10} -$
$24\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10} + 36\omega_5^2\omega_{12}\omega_{10}^2v_2^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_{10} + 12\omega_5^2\omega_{12}\omega_{10}^2c_s^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}c_s^2 - 4\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 + 18\omega_5^3\omega_{21}\omega_{15}\omega_{12}v_2^2 +$
$6\omega_5^3\omega_{15}\omega_{10}^2 - 12\omega_5^3\omega_{12}\omega_{10}^2c_s^2 + 36\omega_5^3\omega_{21}\omega_{12}\omega_{10}^2v_2^2 - 12\omega_5^2\omega_{15}\omega_{12}\omega_{10}^2c_s^2 - 36\omega_5^2\omega_{15}\omega_{12}\omega_{10}^2v_2^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{10} + 12\omega_5^3\omega_{21}\omega_{12}\omega_{10}^2c_s^2 -$
$36\omega_5^3\omega_{12}\omega_{10}^2v_2^2 + 18\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 - 18\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10}v_2^2 + 12\omega_5^3\omega_{12}\omega_{10}^2 - 12\omega_5^3\omega_{21}\omega_{12}\omega_{10}^2 - 12\omega_5^2\omega_{21}\omega_{12}\omega_{10} -$
$18\omega_5^3\omega_{15}\omega_{12}\omega_{10}v_2^2 + 12\omega_5^2\omega_{21}\omega_{12}\omega_{10}c_s^2 + 36\omega_5^2\omega_{21}\omega_{12}\omega_{10}v_2^2 - 6\omega_5^3\omega_{15}\omega_{12}\omega_{10}c_s^2 - \omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 + 12\omega_5^2\omega_{15}\omega_{10}^2c_s^2 - 6\omega_5^3\omega_{15}\omega_{12}\omega_{10}^2 -$
$12\omega_5^2\omega_{15}\omega_{10}^2 + 36\omega_5^2\omega_{15}\omega_{10}^2v_2^2 - 24\omega_5^2\omega_{21}\omega_{12}\omega_{10}^2c_s^2 + 18\omega_5^3\omega_{15}\omega_{12}\omega_{10}^2v_2^2 - 12\omega_5\omega_{21}\omega_{12}\omega_{10}^2 + 6\omega_5^3\omega_{15}\omega_{12}\omega_{10}^2c_s^2 - 72\omega_5^2\omega_{21}\omega_{12}\omega_{10}^2v_2^2 +$
$12\omega_5^3\omega_{12}\omega_{10}c_s^2 - 36\omega_5^3\omega_{21}\omega_{12}\omega_{10}v_2^2 + 12\omega_5\omega_{21}\omega_{12}\omega_{10}^2c_s^2 + 36\omega_5\omega_{21}\omega_{12}\omega_{10}^2v_2^2 - 12\omega_5^3\omega_{21}\omega_{12}\omega_{10}c_s^2 - 12\omega_{21}\omega_{15}\omega_{12}\omega_{10}^2c_s^2 + 36\omega_5^3\omega_{12}\omega_{10}v_2^2 -$
$12\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 - 36\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}v_2^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 24\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}c_s^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_{10}v_2^2 -$
$12\omega_5^2\omega_{21}\omega_{15}\omega_{10}c_s^2 - 12\omega_5^2\omega_{12}\omega_{10}^2 + 72\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}v_2^2 - 18\omega_5^3\omega_{15}\omega_{10}^2v_2^2 - 36\omega_5^2\omega_{21}\omega_{15}\omega_{12}v_2^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}c_s^2 + 12\omega_5^2\omega_{15}\omega_{12}\omega_{10}^2 -$
$6\omega_5^3\omega_{15}\omega_{10}^2c_s^2 + 6\omega_5^3\omega_{15}\omega_{12}\omega_{10} + 6\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10}$

$C_{11} = -306\omega_5^3\omega_{15}^2\omega_{10}v_2^2c_s^2 + 36\omega_5^2\omega_{15}\omega_{10}^3v_2^4 + 36\omega_5^3\omega_{15}\omega_{10}v_2^2 - 18\omega_5^2\omega_{15}\omega_{10}^3c_s^4 + 36\omega_5^3\omega_{10}^2v_2^2 + 36\omega_5\omega_{15}\omega_{10}^3v_2^2c_s^2 + 18\omega_5^2\omega_{15}^2\omega_{10}^2v_2^2c_s^2 -$
$5\omega_5^2\omega_{15}^2\omega_{10}^3c_s^2 - 12\omega_5^3\omega_{15}^2\omega_{10}c_s^4 - 90\omega_5^3\omega_{15}^2\omega_{10}v_2^4 + 6\omega_5^2\omega_{15}^2\omega_{10}^3v_2^2 - \omega_5^3\omega_{15}^2\omega_{10}^2c_s^2 - 19\omega_5^3\omega_{15}^2\omega_{10}^2v_2^2 + 72\omega_5^3\omega_{15}\omega_{10}^2v_2^4 - 36\omega_5^2\omega_{10}^3v_2^4 + 54\omega_5^2\omega_{15}\omega_{10}^3v_2^2c_s^2 +$
$108\omega_5^3\omega_{10}^3v_2^2c_s^2 - 6\omega_5^3\omega_{15}\omega_{10}^2c_s^4 - 12\omega_5\omega_{15}\omega_{10}^3c_s^2 + 252\omega_5^3\omega_{15}^2v_2^2c_s^2 - 6\omega_5^2\omega_{15}^2\omega_{10}^2c_s^2 + 198\omega_5^3\omega_{15}\omega_{10}^2v_2^2c_s^2 + 12\omega_5^2\omega_{15}\omega_{10}^2c_s^4 - 108\omega_5^2\omega_{10}^3v_2^2c_s^2 -$
$36\omega_5^3\omega_{10}^3v_2^2 - 24\omega_5\omega_{15}^2\omega_{10}^3c_s^4 - 12\omega_5^3\omega_{15}^2c_s^2 + 6\omega_5^3\omega_{15}\omega_{10}^3c_s^4 - 39\omega_5^3\omega_{15}\omega_{10}^3v_2^4 - 72\omega_5^3\omega_{15}^2v_2^2 - 4\omega_5^3\omega_{15}^2\omega_{10}^3v_2^2 - 12\omega_5^2\omega_{15}^2\omega_{10}c_s^4 + 12\omega_5^3\omega_{15}^2\omega_{10}^3v_2^2c_s^2 -$
$12\omega_5^2\omega_{15}\omega_{10}^2c_s^2 + 36\omega_5^3\omega_{10}^3v_2^4 - 108\omega_5^3\omega_{10}^2v_2^2c_s^2 + 36\omega_5^2\omega_{15}\omega_{10}^2v_2^2c_s^2 + 6\omega_5\omega_{15}^2\omega_{10}^3c_s^2 + 12\omega_5\omega_{15}\omega_{10}^3c_s^4 - 18\omega_5\omega_{10}^3v_2^2c_s^2 - 108\omega_5^3\omega_{15}\omega_{10}v_2^2c_s^2 +$
$6\omega_5^2\omega_{15}^2\omega_{10}^2c_s^4 + 12\omega_{15}^2\omega_{10}^3c_s^4 - 3\omega_5^2\omega_{15}^3\omega_{10}^3v_2^2c_s^2 + 4\omega_5^3\omega_{15}^2\omega_{10}^3v_2^4 - \omega_5^3\omega_{15}^2\omega_{10}^3c_s^4 + 12\omega_5^2\omega_{15}^2\omega_{10}c_s^2 + 12\omega_5^3\omega_{15}^2c_s^4 - 6\omega_5^3\omega_{15}\omega_{10}^3c_s^2 + 39\omega_5^3\omega_{15}\omega_{10}^3v_2^2 +$
$72\omega_5^3\omega_{15}^2v_2^4 + 12\omega_5^3\omega_{15}^2\omega_{10}c_s^2 + 13\omega_5^2\omega_{15}^2\omega_{10}^3c_s^4 + 60\omega_5^3\omega_{15}^2\omega_{10}^2v_2^2c_s^2 - 6\omega_5^2\omega_{15}^2\omega_{10}^3v_2^4 + 90\omega_5^3\omega_{15}^2\omega_{10}v_2^2 - 36\omega_5^3\omega_{15}\omega_{10}v_2^4 - 36\omega_5^2\omega_{15}\omega_{10}^3v_2^2 +$
$18\omega_5^2\omega_{15}\omega_{10}^3c_s^2 - 36\omega_5^3\omega_{10}^2v_2^4 - 36\omega_5^2\omega_{15}^2\omega_{10}v_2^2c_s^2 + 36\omega_5^2\omega_{10}^3v_2^2 - 72\omega_5^3\omega_{15}\omega_{10}^2v_2^2 - 99\omega_5^3\omega_{15}\omega_{10}^3v_2^2c_s^2 + 6\omega_5^3\omega_{15}\omega_{10}^2c_s^2 + \omega_5^3\omega_{15}^2\omega_{10}^2c_s^4 + 19\omega_5^3\omega_{15}^2\omega_{10}^2v_2^4$

$C_{12} = 12 - 78\omega_{10}^2c_s^2 - 98\omega_{10}^2v_2^2 - 156v_2^2 - 132c_s^2 - 216\omega_{10}c_s^4 - 34\omega_{10}^3v_2^2c_s^2 - 216\omega_{10}v_2^4 - 1008\omega_{10}v_2^2c_s^2 + 10\omega_{10}^3v_2^2 + 6\omega_{10}^2c_s^2 + 672v_2^2c_s^2 -$
$9\omega_{10}^3v_2^4 + 404\omega_{10}^2v_2^2c_s^2 - \omega_{10}^3 - 5\omega_{10}^3c_s^4 + 8\omega_{10}^2 - 18\omega_{10} + 144v_2^4 + 144c_s^4 + 82\omega_{10}^2c_s^4 + 90\omega_{10}^2v_2^4 + 198\omega_{10}c_s^2 + 234\omega_{10}v_2^2$

$C_{13} = 12 - 22\omega_{10}^2c_s^2 - 154\omega_{10}^2v_2^2 - 252v_2^2 - 36c_s^2 - 36\omega_{10}c_s^4 - 18\omega_{10}^3v_2^2c_s^2 - 756\omega_{10}v_2^4 - 648\omega_{10}v_2^2c_s^2 + 14\omega_{10}^3v_2^2 + 2\omega_{10}^3c_s^2 + 432v_2^2c_s^2 -$
$29\omega_{10}^3v_2^4 + 252\omega_{10}^2v_2^2c_s^2 - \omega_{10}^3 - \omega_{10}^3c_s^4 + 8\omega_{10}^2 - 18\omega_{10} + 504v_2^4 + 24c_s^4 + 14\omega_{10}^2c_s^4 + 310\omega_{10}^2v_2^4 + 54\omega_{10}c_s^2 + 378\omega_{10}v_2^2$

$C_{14} = -12\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_7^2 + 6\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7 - 2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 +$
$12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_{16}\omega_{10} + 12\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_6\omega_{16}\omega_7^2 - 18\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_{16}\omega_{10}\omega_7^2 +$
$12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_7^2 + 12\omega_{17}\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 + 12\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{16}\omega_{10}\omega_7^2 + 12\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7 -$

$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{17}\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7 - 12\omega_{17}\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 +$
$12\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12}\omega_{16}\omega_{10}\omega_7^2 - 6\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10} - 18\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7 - 6\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7 -$
$\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 + 10\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_{16}\omega_{10}\omega_7^2 + 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{16}\omega_7^2 - 24\omega_{17}\omega_{14}\omega_8\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 -$
$12\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{10}\omega_7 - 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_{10}\omega_7^2 - 6\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{14}\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 +$
$12\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7 + 12\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 + 12\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7 - 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_{16}\omega_7^2 +$
$12\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 + 12\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 +$
$6\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7 - 12\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 + 12\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_7^2 + 12\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7 +$
$24\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{12}\omega_{16}\omega_{10}\omega_7^2 + 12\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_{10}\omega_7 + 6\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2 -$
$18\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_{16}\omega_{10}\omega_7 + 12\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\omega_{10}\omega_7^2$

$C_{15} =$
$-6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^4 + 13\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 + 54\omega_{16}\omega_{10}^3\omega_7^2v_2^2c_s^2 + 36\omega_{10}^3\omega_7^3v_2^4 + 39\omega_{16}\omega_{10}^3\omega_7^3v_2^2 - 6\omega_{16}\omega_{10}^3\omega_7^3c_s^2 - 12\omega_{16}^2\omega_7^3c_s^2 + 12\omega_{16}^2\omega_{10}^3c_s^4 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^4 -$
$90\omega_{16}^2\omega_{10}\omega_7^3v_2^4 - 12\omega_{16}^2\omega_{10}\omega_7^3c_s^4 + 108\omega_{10}^3\omega_7^3v_2^2c_s^2 - 72\omega_{16}^2\omega_7^3v_2^2 - \omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 - 19\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2c_s^2 + 6\omega_{16}^2\omega_{10}^3\omega_7c_s^2 + 18\omega_{16}\omega_{10}^3\omega_7^2c_s^2 -$
$108\omega_{10}^2\omega_7^3v_2^2c_s^2 - 108\omega_{16}\omega_{10}\omega_7^3v_2^2c_s^2 - 36\omega_{16}\omega_{10}^3\omega_7^2v_2^2 + 18\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2c_s^2 - \omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 - 36\omega_{10}^3\omega_7^2v_2^4 + 4\omega_{16}^2\omega_{10}^3\omega_7^3v_2^4 + 36\omega_{16}\omega_{10}^2\omega_7^2v_2^2c_s^2 +$
$36\omega_{10}^2\omega_7^3v_2^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 + 36\omega_{16}\omega_{10}\omega_7^3v_2^2 + 72\omega_{16}\omega_{10}^2\omega_7^3v_2^4 - 12\omega_{16}^2\omega_{10}\omega_7^2c_s^4 + 12\omega_{16}\omega_{10}^3\omega_7c_s^4 - 6\omega_{16}\omega_{10}^2\omega_7^3c_s^4 - 306\omega_{16}^2\omega_{10}\omega_7^3v_2^2c_s^2 + 36\omega_{10}^3\omega_7^2v_2^2 +$
$12\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2c_s^2 - 4\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2 - 18\omega_{16}\omega_{10}^3\omega_7^2c_s^4 - 108\omega_{10}^3\omega_7^2v_2^2c_s^2 + 36\omega_{16}\omega_{10}^3\omega_7^2v_2^4 + 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2 - 72\omega_{16}\omega_{10}^2\omega_7^3v_2^2 - 12\omega_{16}\omega_{10}^3\omega_7c_s^2 +$
$6\omega_{16}\omega_{10}^2\omega_7^3c_s^2 - 99\omega_{16}\omega_{10}^3\omega_7^3v_2^2c_s^2 - 36\omega_{10}^2\omega_7^3v_2^4 - 36\omega_{16}\omega_{10}\omega_7^3v_2^4 + 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4 + 36\omega_{16}\omega_{10}^3\omega_7v_2^2c_s^2 - 39\omega_{16}\omega_{10}^3\omega_7^3v_2^4 - 36\omega_{16}^2\omega_{10}\omega_7^2v_2^2c_s^2 +$
$6\omega_{16}\omega_{10}^3\omega_7^3c_s^4 + 252\omega_{16}^2\omega_7^3v_2^2c_s^2 + 198\omega_{16}\omega_{10}^2\omega_7^3v_2^2c_s^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 - 5\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 36\omega_{10}^3\omega_7^3v_2^2 + \omega_{16}^2\omega_{10}^2\omega_7^3c_s^4 + 60\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2c_s^2 +$
$19\omega_{16}^2\omega_{10}^2\omega_7^3v_2^4 - 24\omega_{16}^2\omega_{10}^3\omega_7c_s^4 - 18\omega_{16}^2\omega_{10}^3\omega_7v_2^2c_s^2 + 12\omega_{16}^2\omega_7^3c_s^4 + 90\omega_{16}^2\omega_{10}\omega_7^3v_2^2 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2 + 12\omega_{16}^2\omega_{10}\omega_7^3c_s^2 + 72\omega_{16}^2\omega_7^3v_2^4$

$C_{16} = 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} - 12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_2c_s^2v_1^2 - 3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_3^2v_2^2\omega_{20}v_1 - 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_2^2c_s^2\omega_{20}v_1 - 6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2v_1^2 - 6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2c_s^2\omega_{20} + 6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2c_s^2\omega_{20}v_1 +$
$12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2 + 6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_2c_s^2v_1^2 + 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2c_s^2 +$
$12\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 - 12\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} + 3\omega_{14}\omega_8\omega_5\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} - 3\omega_{14}\omega_8\omega_5\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$12\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 + 12\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} + 3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 - 3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} +$
$12\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2c_s^2\omega_{20} - 12\omega_5\omega_{12}\omega_6\omega_{19}v_3^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^4\omega_{20} + 12\omega_8\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} - 12\omega_8\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 +$
$12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2c_s^2v_1 - 12\omega_8\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 - 12\omega_8\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 - 6\omega_8\omega_5\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 - 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_2c_s^2\omega_{20}v_1^2 +$
$6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2v_1 - 12\omega_5\omega_{12}\omega_6\omega_{19}v_3^2c_s^2\omega_{20}v_1 - 12\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2^2\omega_{20}v_1 + 3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 - 12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_3^2c_s^2v_1 + 12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2v_1^2 - 3\omega_{14}\omega_8\omega_5\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 -$
$12\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 - 3\omega_{14}\omega_8\omega_5\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 - 12\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 + 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2v_1^2 +$
$12\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 + 12\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 - 12\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_3^2v_2^2v_1 -$
$12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 + 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_2c_s^2\omega_{20}v_1^2 - 6\omega_{14}\omega_8\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 + 6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_2^2c_s^2\omega_{20}v_1 +$
$6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2^2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2^2v_1 - 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_2^2c_s^2v_1 - 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_2c_s^2\omega_{20}v_1^2 +$
$6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 - 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 - 3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2v_1 + 3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_3^2v_2c_s^2\omega_{20} + 12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2^2v_1 - 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2v_1 -$
$6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_3^2v_2v_1^2 + 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2v_1 + 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_2^2c_s^2v_1 + 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2v_1^2 -$
$12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2v_1^2 + 6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 + 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2\omega_{20}v_1^2 - 12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 -$
$12\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 - 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_3^2v_2c_s^2 + 6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 - 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2\omega_{20}v_1^2 -$
$6\omega_{14}\omega_8\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 + 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2 - 6\omega_8\omega_5\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 - 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_3^2v_2\omega_{20}v_1^2 -$
$12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2 + 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 + 12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2v_1^2 + 12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_3^2v_2c_s^2 +$
$12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_2c_s^2v_1^2 - 6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2c_s^2 - 6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2 -$
$12\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 + 3\omega_{14}\omega_8\omega_5\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 + 12\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 - 3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 +$
$12\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2\omega_{20}v_1^2 + 12\omega_8\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 - 12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2v_1 + 12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_3^2v_2v_1^2 - 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_3^2c_s^2v_1 -$
$12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2v_1^2 - 6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2v_1^2 - 12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_2^2c_s^2v_1 - 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2^2v_1 + 6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2v_1 +$
$12\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_2^2c_s^2v_1 + 3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_3^2v_2\omega_{20}v_1^2 - 12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 - 3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1^2 +$
$12\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 - 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20}v_1^2 + 3\omega_{14}\omega_8\omega_5\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 + 6\omega_8\omega_5\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1^2 + 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_3^2c_s^2v_1 +$
$12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2^2v_1 + 12\omega_5\omega_{12}\omega_6\omega_{19}v_2c_s^2\omega_{20}v_1^2 + 6\omega_{14}\omega_8\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 + 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2v_1 +$
$6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_3^2v_2^2v_1 + 6\omega_{14}\omega_8\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 - 6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_2c_s^2\omega_{20}v_1^2 - 6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 +$
$12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2^2\omega_{20}v_1 + 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_2^2c_s^2\omega_{20}v_1 - 6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 + 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 -$
$12\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 + 12\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 - 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2v_1 + 12\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} - 6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 + 12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 - 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_2^2c_s^2\omega_{20}v_1 -$
$6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2^2\omega_{20}v_1 + 12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2c_s^2\omega_{20} - 12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} +$
$12\omega_{14}\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 - 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}v_3^2c_s^2\omega_{20}v_1 - 6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 - 6\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$12\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} + 12\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 + 3\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_2c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_3^2c_s^2\omega_{20}v_1 -$
$6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_{12}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}v_3^2v_2c_s^2\omega_{20} - 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^4\omega_{20} -$
$6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_7v_2c_s^2v_1^2 + 6\omega_{14}\omega_8\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 - 6\omega_{14}\omega_8\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} - 12\omega_{14}\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2v_1^2 -$
$6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_3^2v_2c_s^2\omega_{20} - 6\omega_8\omega_5\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} + 6\omega_8\omega_5\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6v_3^2c_s^2\omega_{20}v_1 + 6\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\omega_7v_2c_s^2v_1^2$

$C_{17} = -4\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_2c_s^2v_1 - 4\omega_{12}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} + 8\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_3^2v_2^2 + \omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} -$
$8\omega_8\omega_{12}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_3^2c_s^2\omega_{20} + 4\omega_8\omega_{12}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} + 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_2^2c_s^2 - 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_2^2c_s^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - 4\omega_5\omega_{12}\omega_{19}v_2^2c_s^2\omega_{20} + 8\omega_{12}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_3^2c_s^2 + 2\omega_8\omega_5\omega_{12}\omega_{19}v_2^2c_s^2\omega_{20} -$
$4\omega_8\omega_5\omega_{12}\omega_{19}v_3^2v_2\omega_{20}v_1 + 8\omega_5\omega_{12}\omega_{19}v_3^2v_2\omega_{20}v_1 + 4\omega_8\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_3^2v_2^2\omega_{20} + \omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} -$
$4\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - 4\omega_{14}\omega_5\omega_{12}\omega_{19}v_2^2c_s^2 - 8\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_3^2v_2v_1 - 8\omega_{14}\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 - 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_3^2v_2^2 +$

$4\omega_{14}\omega_5\omega_{12}\omega_{19}v_3^2c_s^2\omega_{20} - 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_3^2c_s^2 - 4\omega_8\omega_5\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 + 8\omega_{14}\omega_8\omega_5\omega_{12}v_3^2v_2v_1 - 8\omega_{14}\omega_5\omega_{12}\omega_{19}v_2c_s^2\omega_{20}v_1 +$
$4\omega_{14}\omega_5\omega_{12}\omega_{19}v_3^2v_2^2\omega_{20} + 2\omega_8\omega_5\omega_{19}\omega_7v_2^2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_3^2v_2\omega_{20}v_1 + 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_2^2c_s^2\omega_{20} - 4\omega_8\omega_{19}\omega_7v_2^2c_s^2\omega_{20} -$
$4\omega_8\omega_5\omega_{12}\omega_{19}v_2c_s^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_{19}\omega_7v_2^2c_s^2\omega_{20} - 4\omega_{14}\omega_8\omega_5\omega_{12}v_2^2c_s^2 + 8\omega_{14}\omega_5\omega_{12}\omega_{19}v_2c_s^2v_1 + 8\omega_5\omega_{12}\omega_{19}v_2c_s^2\omega_{20}v_1 -$
$8\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2v_1 - 8\omega_8\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 + 8\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 + 8\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 -$
$8\omega_{14}\omega_5\omega_{12}\omega_{19}v_3^2v_2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_2c_s^2v_1 + 8\omega_{14}\omega_{12}\omega_{19}\omega_7v_3^2v_2v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2^2c_s^2\omega_{20} - 8\omega_{14}\omega_{12}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_2^2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_3^2v_2^2 -$
$2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_3^2c_s^2 - 4\omega_8\omega_5\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2^2 + 2\omega_{14}\omega_8\omega_5\omega_{12}v_2^2c_s^2\omega_{20} + 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_2^2c_s^2 +$
$2\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_3^2c_s^2 - 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} + 2\omega_{14}\omega_8\omega_{19}\omega_7v_3^2v_2^2\omega_{20} + 4\omega_5\omega_{12}\omega_{19}\omega_7v_2^2c_s^2\omega_{20} + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2v_1 +$
$\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2^2c_s^2\omega_{20} - 4\omega_{12}\omega_{19}\omega_7v_2^2c_s^2\omega_{20} + 4\omega_8\omega_{12}\omega_{19}\omega_7v_2^2c_s^2\omega_{20} - 4\omega_{14}\omega_8\omega_5\omega_{12}v_3^2v_2^2 + 8\omega_{14}\omega_8\omega_5\omega_{12}v_2c_s^2v_1 -$
$4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} - 8\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_2c_s^2v_1 + 2\omega_{14}\omega_8\omega_5\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - 4\omega_{14}\omega_8\omega_5\omega_{12}v_3^2c_s^2 - 4\omega_5\omega_{12}\omega_{19}v_3^2v_2^2\omega_{20} +$
$8\omega_8\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{12}\omega_{19}v_3^2v_2^2\omega_{20} + 2\omega_8\omega_5\omega_{12}\omega_{19}v_3^2c_s^2\omega_{20} - 4\omega_5\omega_{12}\omega_{19}v_3^2c_s^2\omega_{20} - 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} -$
$\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_2^2c_s^2\omega_{20} + 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} + 4\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 - 4\omega_{14}\omega_8\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{19}\omega_7v_3^2c_s^2\omega_{20} -$
$8\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 - 4\omega_{14}\omega_8\omega_5\omega_{12}v_2c_s^2\omega_{20}v_1 - 4\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_3^2v_2v_1 + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_2^2c_s^2 +$
$4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_3^2c_s^2 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}v_2^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2^2c_s^2 + 4\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2^2 +$
$2\omega_8\omega_5\omega_{19}\omega_7v_3^2v_2^2\omega_{20} + 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} - 4\omega_8\omega_{19}\omega_7v_3^2v_2^2\omega_{20} + 8\omega_{14}\omega_{12}\omega_{19}\omega_7v_2c_s^2v_1 - \omega_{14}\omega_8\omega_5\omega_{19}\omega_7v_3^2v_2^2\omega_{20} +$
$4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_2^2c_s^2 + 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_3^2v_2^2 + 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_3^2c_s^2 - 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_3^2v_2v_1 + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2v_1 +$
$8\omega_8\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - 4\omega_8\omega_{19}\omega_7v_3^2c_s^2\omega_{20} + 8\omega_{14}\omega_5\omega_{12}\omega_{19}v_3^2v_2v_1 +$
$4\omega_5\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - 4\omega_{14}\omega_5\omega_{12}\omega_{19}v_3^2v_2^2 + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_3^2v_2\omega_{20}v_1 - 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_2^2c_s^2 + 2\omega_{14}\omega_8\omega_5\omega_{12}v_3^2c_s^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_3^2c_s^2\omega_{20} + 4\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - 4\omega_{14}\omega_5\omega_{12}\omega_{19}v_3^2c_s^2 - 2\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - 8\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 -$
$2\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_3^2v_2^2\omega_{20} - 4\omega_{14}\omega_8\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 + 4\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{12}v_3^2v_2^2\omega_{20} -$
$8\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2v_1 + 2\omega_{14}\omega_8\omega_{19}\omega_7v_2^2c_s^2\omega_{20} - 4\omega_{14}\omega_8\omega_5\omega_{12}v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_2^2c_s^2\omega_{20} + 4\omega_5\omega_{12}\omega_{19}\omega_7v_3^2v_2^2\omega_{20}$

$C_{18} = \omega_{14}\omega_8\omega_5^2\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 - 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7c_s^4\omega_{20} + 8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 + 8\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2v_2v_1 -$
$8\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7v_2c_s^2v_1 + 4\omega_{14}\omega_8\omega_5\omega_{19}\omega_7c_s^4\omega_{20} - 2\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 + 4\omega_5^2\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1^2 -$
$4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^4\omega_{20} - 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2c_s^2 - 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7^2c_s^4\omega_{20} - 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2 + 4\omega_8\omega_5\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 -$
$8\omega_8\omega_5\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 - 4\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 + 8\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2v_2v_1 + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}c_s^4\omega_{20} + \omega_{14}\omega_8\omega_5^2\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} -$
$4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 + 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7c_s^2v_1^2 - 2\omega_{14}\omega_8\omega_5^2\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} + 4\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} +$
$4\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^2v_1^2 - 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}c_s^4\omega_{20} - 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_2c_s^2v_1 - 8\omega_5^2\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 +$
$8\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 - 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2v_1^2 + 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2v_3^2v_2v_1 - 8\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7v_2c_s^2v_1 - 4\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 -$
$2\omega_{14}\omega_8\omega_5^2\omega_{19}\omega_7c_s^4\omega_{20} - 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 + 2\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 + 4\omega_8\omega_5\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} - 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2v_1^2 -$
$2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} + 2\omega_8\omega_5^2\omega_{19}\omega_7^2c_s^4\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^2v_1^2 - 4\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 +$
$4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7v_3^2c_s^2 - 8\omega_8\omega_5\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 + 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 - 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^4 + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2v_2v_1 -$
$\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} - 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} + 8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_2\omega_{20}v_1 - 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7c_s^4 - 4\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 +$
$2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_5^2\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} + 4\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2v_1^2 - 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7v_3^2c_s^2\omega_{20} -$
$8\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2v_2c_s^2v_1 - 12\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7c_s^4\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 + 8\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 - 8\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 +$
$4\omega_{14}\omega_8\omega_5\omega_{12}\omega_7c_s^4\omega_{20} + 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7v_3^2v_1^2 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^4\omega_{20} - 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 -$
$2\omega_{14}\omega_8\omega_5^2\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 - 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1^2 - 4\omega_8\omega_5\omega_{19}\omega_7^2c_s^4\omega_{20} - 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2c_s^2v_1^2 - 4\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} +$
$2\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7c_s^4\omega_{20} + 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7c_s^4 - 2\omega_8\omega_5^2\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2v_3^2\omega_{20}v_1^2 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2 +$
$4\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} + 4\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 + 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^4 - 4\omega_5^2\omega_{12}\omega_{19}\omega_7c_s^4\omega_{20} - 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 +$
$4\omega_8\omega_5^2\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2v_3^2c_s^2 - 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2v_2v_1 + 8\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 +$
$4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^4v_1^2 - 4\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 + 8\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2v_2c_s^2\omega_{20}v_1 - 8\omega_5\omega_{12}\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 -$
$4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7c_s^4 - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2v_1^2 + 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2v_2c_s^2v_1 - 8\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2v_2v_1 + 2\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 -$
$4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^4 + \omega_{14}\omega_8\omega_5^2\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_7^2c_s^4\omega_{20} -$
$2\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2\omega_{20}v_1^2 + 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7v_2c_s^2\omega_{20}v_1 - 8\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2v_3^2v_1^2 + 8\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_2c_s^2v_1 -$
$8\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7v_3^2v_2v_1 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^4\omega_{20} + 4\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^4 + 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2c_s^4 - 4\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} + 4\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^4\omega_{20} - 2\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^4\omega_{20} + 8\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_2c_s^2v_1 +$
$4\omega_{14}\omega_8\omega_5\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 + 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7c_s^2v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2 + 2\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} + 4\omega_8\omega_5\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 -$
$8\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 + 8\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2v_3^2v_2\omega_{20}v_1 + 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^4\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 -$
$8\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2v_2v_1 - 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 + 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 + 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2c_s^2 +$
$4\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^4\omega_{20} - 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2\omega_{20}v_1^2 - 4\omega_5\omega_{12}\omega_{19}\omega_7^2c_s^4\omega_{20} + 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} + 4\omega_8\omega_5^2\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 +$
$\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_5^2\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 + 4\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7c_s^4\omega_{20} + 8\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2c_s^2 -$
$2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7v_3^2\omega_{20}v_1^2 - 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7c_s^2v_1^2 + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_2c_s^2v_1 + 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 + 4\omega_{14}\omega_8\omega_5\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 -$
$4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^2v_1^2 + 4\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7v_3^2v_2\omega_{20}v_1 - 8\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 + 4\omega_{14}\omega_5^2\omega_{12}\omega_{19}\omega_7v_3^2v_1^2 + 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 -$
$4\omega_8\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 + 4\omega_5\omega_{12}\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_5^2\omega_{12}\omega_7^2v_3^2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\omega_7^2v_3^2v_1^2$

$C_{19} =$
$4\omega_{14}\omega_{12}\omega_{19}\omega_7v_2c_s^2 - 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_2v_1^2 - 4\omega_{14}\omega_8\omega_5\omega_{12}c_s^2v_1 + 4\omega_8\omega_{19}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_2^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{19}\omega_7v_2\omega_{20}v_1^2 +$
$2\omega_{14}\omega_8\omega_{19}\omega_7v_2^2\omega_{20}v_1 - 4\omega_{14}\omega_8\omega_5\omega_{12}v_2^2v_1 + 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_2v_1^2 - 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_2c_s^2 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_2^2v_1 + 2\omega_{14}\omega_8\omega_{19}\omega_7c_s^2\omega_{20}v_1 -$
$2\omega_{14}\omega_8\omega_{19}\omega_7v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20} - 4\omega_5\omega_{12}\omega_{19}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_5\omega_{12}v_2\omega_{20}v_1^2 +$
$4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7c_s^2v_1 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{12}\omega_{19}v_2\omega_{20}v_1^2 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}v_2^2\omega_{20}v_1 +$
$4\omega_5\omega_{12}\omega_{19}v_2\omega_{20}v_1^2 + 4\omega_8\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1 - 4\omega_8\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7c_s^2v_1 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_2\omega_{20}v_1^2 +$
$\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20} - 4\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1 + 4\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_2c_s^2 +$
$2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_2^2v_1 - \omega_{14}\omega_8\omega_5\omega_{12}\omega_7c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2 - \omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_2^2\omega_{20}v_1 -$
$4\omega_{14}\omega_5\omega_{12}\omega_{19}c_s^2v_1 - 4\omega_{12}\omega_{19}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_2v_1^2 + \omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2^2\omega_{20}v_1 - 4\omega_{14}\omega_5\omega_{12}\omega_{19}v_2^2v_1 - 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_2\omega_{20}v_1^2 -$

$2\omega_8\omega_5\omega_{19}\omega_7v_2\omega_{20}v_1^2 + 4\omega_8\omega_{12}\omega_{19}\omega_7v_2^2\omega_{20}v_1 - 4\omega_{14}\omega_5\omega_{12}\omega_{19}v_2c_s^2\omega_{20} + 4\omega_{14}\omega_5\omega_{12}\omega_{19}c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2v_1^2 +$
$4\omega_{14}\omega_8\omega_5\omega_{12}v_2v_1^2 - 2\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_5\omega_{12}v_2^2\omega_{20}v_1 + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}c_s^2v_1 + 4\omega_8\omega_{19}\omega_7v_2c_s^2\omega_{20} -$
$4\omega_8\omega_{19}\omega_7c_s^2\omega_{20}v_1 + 4\omega_5\omega_{12}\omega_{19}\omega_7v_2^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_5\omega_{19}\omega_7v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_5\omega_{19}\omega_7c_s^2\omega_{20}v_1 + 4\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_2^2v_1 - 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2 +$
$4\omega_{14}\omega_8\omega_5\omega_{12}v_2c_s^2 - 4\omega_{14}\omega_{12}\omega_{19}\omega_7c_s^2v_1 - \omega_{14}\omega_8\omega_5\omega_{19}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_{19}\omega_7v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_2\omega_{20}v_1^2 - 4\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20} +$
$4\omega_5\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1 - 4\omega_8\omega_{19}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{12}v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_5\omega_{12}c_s^2\omega_{20}v_1 - 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_2^2v_1 - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}v_2c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1 - 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_2v_1^2 + 2\omega_8\omega_5\omega_{12}\omega_{19}c_s^2\omega_{20}v_1 -$
$2\omega_8\omega_5\omega_{12}\omega_{19}v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_2v_1^2 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}v_2c_s^2 - 4\omega_5\omega_{12}\omega_{19}c_s^2\omega_{20}v_1 + 4\omega_5\omega_{12}\omega_{19}v_2c_s^2\omega_{20} - 4\omega_8\omega_{12}\omega_{19}\omega_7v_2\omega_{20}v_1^2 +$
$2\omega_8\omega_5\omega_{19}\omega_7v_2^2\omega_{20}v_1 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20} - 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1 + 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_2^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2\omega_{20}v_1^2 +$
$4\omega_{12}\omega_{19}\omega_7v_2\omega_{20}v_1^2 + \omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_{12}\omega_{19}\omega_7v_2c_s^2 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_7v_2^2v_1 + 4\omega_{14}\omega_5\omega_{12}\omega_{19}v_2v_1^2 -$
$2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7v_2^2v_1 - 4\omega_{14}\omega_{12}\omega_{19}\omega_7v_2c_s^2\omega_{20} + 4\omega_{14}\omega_{12}\omega_{19}\omega_7c_s^2\omega_{20}v_1 - 4\omega_{14}\omega_5\omega_{12}\omega_{19}\omega_7v_2^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{19}\omega_7v_2c_s^2\omega_{20} +$
$2\omega_8\omega_5\omega_{19}\omega_7c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\omega_7c_s^2v_1 - 4\omega_5\omega_{12}\omega_{19}v_2^2\omega_{20}v_1 - 4\omega_{14}\omega_5\omega_{12}\omega_{19}v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_5\omega_{12}\omega_7c_s^2v_1 + 2\omega_8\omega_5\omega_{12}\omega_{19}v_2^2\omega_{20}v_1$

$C_{20} = \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2c_s^2\omega_{20} -$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$\omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2c_s^2\omega_{20} +$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2v_1^2 - 2\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 +$
$\omega_{17}\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2c_s^2\omega_{20} -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3^2\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3^2v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3^2c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2c_s^2 - 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3c_s^2\omega_{20}v_1^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2v_1 - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2v_1^2 -$
$2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3v_2^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2 - \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3^2\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3^2\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_2^2c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2v_1 +$
$2\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2v_1 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2 +$
$\omega_{17}\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3^2\omega_{23}v_2^2v_1 - \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2v_1 -$
$2\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2v_1^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3^2c_s^2\omega_{20}v_1 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2v_1 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3v_2^2c_s^2\omega_{20} +$
$\omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 +$
$\omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2v_1^2 +$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3v_2^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2v_1^2 +$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3c_s^2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2v_1 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 +$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3^2\omega_{23}v_2^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_8\omega_5\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1^2 +$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3v_2^2c_s^2\omega_{20} +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3c_s^2\omega_{20}v_1^2 - \omega_{17}\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2c_s^2 +$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3^2\omega_{23}v_2^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2v_1 +$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 -$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_{23}v_2^2c_s^2v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 +$
$\omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3^2c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_2^2c_s^2\omega_{20}v_1 +$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3^2v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1^2 -$
$2\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2c_s^2v_1 - 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2 +$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_{23}v_2^2c_s^2\omega_{20}v_1 + 2\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 -$

$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2v_1 +$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}c_s^2v_1 -$
$2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}v_2^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}v_2^2c_s^2\omega_{20} -$
$\omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}v_2^2v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2v_1 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_2^2c_s^2\omega_{20}v_1 -$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3^2c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3^2v_2^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}v_2^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2v_1^2 -$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3c_s^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2c_s^2\omega_{20} - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2v_1^2 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3^2v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3^2\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_2^2c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_2^2c_s^2\omega_{20}v_1 - 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}c_s^2v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}v_2^2v_1 - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3v_2^2c_s^2\omega_{20} -$
$2\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3v_2^2c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2v_1^2 +$
$2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 +$
$2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2v_1^2 + \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2v_1^2 + 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2v_1 + 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 -$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2v_1 +$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3v_2^2c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1^2 +$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3^2\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3^2c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3c_s^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_2^2v_1 + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2c_s^2v_1 +$
$\omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_2^2c_s^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2c_s^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3v_2^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}c_s^2v_1 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}c_s^2\omega_{20}v_1$

$C_{21} = -12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2c_s^2\omega_{20} + 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} + 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2 +$
$24\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} +$
$24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 - 6\omega_{17}\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2v_1 +$
$12\omega_{17}\omega_8\omega_5^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} +$
$6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2 - 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3c_s^2\omega_{20}v_1 + 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} +$
$12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2c_s^2 - 12\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20} -$
$6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2v_1 + 12\omega_{17}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$6\omega_{17}\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} + 24\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} +$
$6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2v_2^2\omega_{20} - 12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4 -$
$24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 24\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 24\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 24\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}c_s^2v_1 +$
$12\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3^2c_s^2\omega_{20} + 12\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} +$
$6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 24\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2 +$
$6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2 + 12\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} +$
$12\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} - 6\omega_{17}\omega_8\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} -$
$24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3v_2^2\omega_{20}v_1 - 12\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20} +$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^4\omega_{20} -$
$12\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} + 12\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} -$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3^2v_2^2\omega_{20} + 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$24\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}v_2^2v_1 + 24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 24\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$12\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2v_1 -$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} + 24\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} +$
$24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}v_2^2 - 18\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20} +$
$6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3^2c_s^2\omega_{20} + 12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} -$
$12\omega_{17}\omega_8\omega_5^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2 - 6\omega_{17}\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} +$
$12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3c_s^2\omega_{20}v_1 + 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 24\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2v_1 + 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3v_2^2\omega_{20}v_1 -$
$24\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} - 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2 -$
$24\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3^2v_2^2\omega_{20} +$
$6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} -$
$6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2 - 24\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2v_1 -$

$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}v_2^2 - 24\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4 - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} + 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} +$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_2^2c_s^2\omega_{20} + 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3v_2^2\omega_{20}v_1 + 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} +$
$12\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} - 24\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_2^2c_s^2\omega_{20} -$
$12\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} + 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2c_s^2\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2 +$
$12\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} +$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} + 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 +$
$12\omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} + 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2v_2^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3v_2^2\omega_{20}v_1 -$
$12\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4 + 12\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} +$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} -$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} + 24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2 +$
$24\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20} -$
$24\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} -$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3c_s^2\omega_{20}v_1 + 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20} - 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20} +$
$12\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2 + 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}c_s^2v_1 - 12\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4 -$
$12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} - 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2 - 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3v_2^2\omega_{20}v_1 -$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3^2v_2^2\omega_{20} + 12\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2 - 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2c_s^2\omega_{20} -$
$12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} - 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3v_2^2\omega_{20}v_1 - 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2v_2^2\omega_{20} -$
$24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3^2c_s^2\omega_{20} + 24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 24\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$12\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} - 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} - 12\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} +$
$24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}v_2^2v_1 - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_2^2c_s^2\omega_{20} -$
$12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} + 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} -$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2c_s^2\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 +$
$24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4 - 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} -$
$24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 + 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3c_s^2\omega_{20}v_1 -$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} + 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2 - 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20} -$
$6\omega_{17}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}v_2^2 - 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} -$
$24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 18\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} + 6\omega_{17}\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} - 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3c_s^2\omega_{20}v_1 -$
$12\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_2^2c_s^2\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3v_2^2\omega_{20}v_1 -$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 24\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} +$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2 + 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} -$
$12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2c_s^2 -$
$6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4 - 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} -$
$12\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 12\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3c_s^2\omega_{20}v_1 -$
$24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 - 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}c_s^2v_1 + 12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20} -$
$12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} - 12\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2 - 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}v_2^2v_1 +$
$6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4 + 24\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 - 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_2^2c_s^2\omega_{20} -$
$12\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} - 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} - 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20} +$
$10\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} +$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2 - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} +$
$12\omega_{17}\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20}v_1 + 24\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$24\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_{17}\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 24\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2v_1 +$
$6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2c_s^2 - 12\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} -$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3^2v_2^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3^2v_2^2\omega_{20} +$
$12\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} - 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} +$
$24\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 - 6\omega_{17}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4 +$
$12\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2v_1 + 12\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}v_2^2v_1 - 18\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} -$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} + 6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_2^2c_s^2\omega_{20} - 6\omega_{17}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} -$
$24\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10}\omega_7^3v_3v_2^2\omega_{20}v_1 - 6\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2 +$
$6\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3^2c_s^2\omega_{20} + 12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} +$
$6\omega_{17}\omega_8\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^2v_3^2c_s^2\omega_{20} + 12\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20} -$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 12\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} - 24\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$12\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_7^3v_3\omega_{23}v_2^2c_s^2\omega_{20} + 24\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}c_s^2v_1$

$C_{22} = -\omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3^2\omega_{23}\omega_{20}v_1 +$
$2\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}\omega_{20}v_1 - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}\omega_{20}v_1^2 +$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}c_s^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}v_1 -$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{20}v_1 + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7v_3\omega_{23}\omega_{20}v_1^2 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2v_1 - \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}v_1^2 + \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_1^2 +$
$2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}v_1 +$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}\omega_{20}v_1 - 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7v_3\omega_{23}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7v_3c_s^2\omega_{20} -$

$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}v_3^2\omega_{23}\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 + 2\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} -$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}v_3c_s^2\omega_{20} + \omega_{17}\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 + 2\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20} -$
$2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 +$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}c_s^2\omega_{20}v_1 + 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} -$
$2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3^2\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{20}v_1^2 - 2\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 +$
$2\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}v_3c_s^2\omega_{20} - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}v_1 -$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 -$
$\omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 + 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}c_s^2\omega_{20} + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2 +$
$\omega_{17}\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 + 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}v_1 + \omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 -$
$2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}v_1 + 2\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20} +$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}v_3^2\omega_{20}v_1 + 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}c_s^2\omega_{20}v_1 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}v_1 +$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3\omega_{20}v_1^2 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3c_s^2\omega_{20} -$
$2\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}c_s^2\omega_{20}v_1 + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{20}v_1^2 -$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2v_1 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_1^2 - 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 -$
$\omega_{17}\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_1^2 +$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1 +$
$\omega_{17}\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_1^2 + 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}v_1 + 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2v_1 -$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_1^2 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{20}v_1 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 -$
$\omega_{17}\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3c_s^2\omega_{20} + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}v_3^2\omega_{23}v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}c_s^2\omega_{20}v_1 +$
$2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}c_s^2\omega_{20}v_1 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 +$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{20}v_1^2 - 2\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 + \omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 -$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}v_3\omega_{20}v_1^2 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2 + 2\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 -$
$2\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_1^2 + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}v_1 -$
$2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}c_s^2\omega_{20}v_1 + 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 -$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3^2\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3^2\omega_{20}v_1 + 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2v_1 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 -$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3c_s^2\omega_{20} + \omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}v_3\omega_{20}v_1^2 -$
$2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_1^2 -$
$\omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}\omega_{20}v_1^2 + \omega_{17}\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 +$
$2\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 + \omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2v_1 -$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_1^2 + \omega_{17}\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_1^2 -$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}v_1 + 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{20}v_1 -$
$\omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3c_s^2\omega_{20} - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}\omega_{20}v_1^2 -$
$2\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3\omega_{20}v_1^2 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_1^2 +$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}c_s^2\omega_{20}v_1 + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3c_s^2\omega_{20} - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2 - 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2v_1 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3^2\omega_{23}\omega_{20}v_1$

$C_{23} = 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2v_1^2 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}v_2^2c_s^2\omega_{20} -$
$2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_2^2\omega_{20}v_1^2 - 4\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2\omega_{20}v_1^2 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} + 4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1^2 +$
$4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 - 4\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} -$
$4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3v_2^2\omega_{20}v_1 + \omega_{17}\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{23}v_2^2\omega_{20}v_1^2 -$
$4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 + 4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3c_s^2\omega_{20}v_1 + 4\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1^2 +$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2v_1^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} + 4\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$4\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1 + \omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} + 4\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2v_1 + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2\omega_{20}v_1^2 + 4\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 + 4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3v_2^2\omega_{20}v_1 - 4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3c_s^2\omega_{20}v_1 - 4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3v_2^2\omega_{20}v_1 +$
$2\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} - 4\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 + 4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} -$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} + 4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} - 4\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2c_s^2 - 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_2^2c_s^2\omega_{20} +$
$4\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}v_2^2\omega_{20}v_1^2 - 4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2\omega_{20}v_1^2 +$
$\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_{8}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 + 4\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{7}v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} +$
$4\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 - 4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2\omega_{20}v_1^2 +$
$4\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2v_1^2 + 2\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{10}\omega_{7}\omega_{23}v_2^2c_s^2\omega_{20} +$
$4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}v_3v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}c_s^2\omega_{20}v_1 + 4\omega_{17}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2v_1^2 + 4\omega_{8}\omega_{5}\omega_{19}\omega_{16}\omega_{7}v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}v_3v_2^2\omega_{20}v_1 - 4\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2v_1 +$
$\omega_{17}\omega_{8}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}v_2^2c_s^2 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{23}v_2^2c_s^2 + 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{8}\omega_{5}\omega_{15}\omega_{16}\omega_{10}\omega_{7}v_3\omega_{23}v_2^2v_1 +$

$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}v_2^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7 v_2^2 c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2 v_1^2 + \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 v_1^2 -$
$4\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2 v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3 c_s^2\omega_{20}v_1 +$
$4\omega_8\omega_5\omega_{19}\omega_{16}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2 c_s^2\omega_{20} + 4\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 c_s^2 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7 v_3\omega_{23}v_2^2\omega_{20}v_1 + 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3 c_s^2\omega_{20}v_1 + 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 +$
$4\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_{20}v_1^2 +$
$4\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$4\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}v_2^2 v_1 + \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_{23}v_2^2 v_1^2 - 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2\omega_{20}v_1^2 +$
$4\omega_8\omega_5\omega_{15}\omega_{19}\omega_7 v_3\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1^2 - 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2 v_1 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7 c_s^2\omega_{20}v_1^2 + 4\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_2^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_2^2 c_s^2\omega_{20} - 4\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2 v_1^2 - 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3 c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 v_1^2 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3 v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 - 4\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 c_s^2\omega_{20} -$
$4\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2 v_1^2 +$
$2\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - \omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2 c_s^2 + \omega_{17}\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_{23}v_2^2 c_s^2\omega_{20} -$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2 c_s^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7 v_3 v_2^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2 v_1^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7 v_2^2 c_s^2\omega_{20} + \omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2 c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7 v_3 c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2 c_s^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}v_2^2 v_1 - 2\omega_8\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 c_s^2\omega_{20} -$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_{23}v_2^2 c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}v_2^2 v_1 - 4\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1 + 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2 v_1 -$
$4\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7 v_3\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_8\omega_5\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 c_s^2 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2 v_1 + 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_3 c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2 v_1 - 4\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3 v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2 v_1 - 4\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}c_s^2\omega_{20}v_1^2 +$
$4\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_7 v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7 v_2^2 c_s^2\omega_{20} - 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2 v_1^2 +$
$\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2 c_s^2\omega_{20} + 4\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}v_2^2 v_1 -$
$4\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2 c_s^2\omega_{20} -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1 - 4\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 +$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}c_s^2\omega_{20}v_1^2 - 4\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7 v_3\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 c_s^2 +$
$4\omega_{17}\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}c_s^2 v_1 - 4\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_7 v_2^2\omega_{20}v_1^2 -$
$4\omega_{17}\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 v_1^2 - 4\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7 v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}v_2^2\omega_{20}v_1^2 +$
$2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_8\omega_5\omega_{15}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 c_s^2\omega_{20} - 4\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_2^2 c_s^2\omega_{20} - \omega_{17}\omega_8\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_8\omega_5\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2 c_s^2\omega_{20} -$
$4\omega_{17}\omega_8\omega_5\omega_{15}\omega_{16}\omega_{10}v_3\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 v_1^2 + \omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2$

$C_{24} = 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 v_2^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2 - 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23} + 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 c_s^2 - 40\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2 -$
$12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 - 36\omega_{19}\omega_{16}\omega_{10}^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_{23}v_2^2 - 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 36\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 -$
$12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}v_2^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2 + 54\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2 - \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2 +$
$12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7 + 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}v_2^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2 v_2^2 + 12\omega_{16}^2\omega_{10}^3\omega_7 v_2^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23}v_2^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}c_s^2 + 36\omega_{16}^2\omega_{10}^3\omega_7 c_s^2 +$
$18\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7 v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23} - 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23} - 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2 + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} +$
$36\omega_{19}\omega_{16}\omega_{10}^3\omega_7 c_s^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 36\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23} + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_2^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} +$
$54\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}v_2^2 - 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_2^2 + 54\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 +$
$18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 - 36\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2 + 36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}c_s^2 + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 36\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2 -$
$18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2 + 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23} - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2 v_2^2 + 12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}v_2^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}^3\omega_7\omega_{23}v_2^2 -$
$12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2 v_2^2 - 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2 c_s^2 - 36\omega_{19}\omega_{10}^3\omega_7\omega_{23}c_s^2 + 6\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} - 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} +$
$12\omega_{19}\omega_{16}\omega_{10}^3\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7 c_s^2 + 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7 v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 + \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}v_2^2 -$
$12\omega_{16}^2\omega_{10}^3\omega_7 - 6\omega_{16}^2\omega_{10}^3\omega_7^2 v_2^2 - 18\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2 + 5\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2 - 6\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7 - 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2$

$C_{25} = -36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 v_2^2 - 36\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 - 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 c_s^2 -$
$72\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 + 72\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 24\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 24\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + 6\omega_{16}\omega_{10}^2\omega_7^3 - 12\omega_{19}\omega_{10}^2\omega_7\omega_{23} +$
$12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} - 12\omega_{16}\omega_{10}^2\omega_7^2 - 12\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2 - \omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2 + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 36\omega_{19}\omega_{10}\omega_7^3\omega_{23}v_2^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23} +$
$18\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}\omega_7^3\omega_{23} + 18\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2 + 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3 c_s^2 + 12\omega_{19}\omega_{10}\omega_7^3 c_s^2 + 36\omega_{19}\omega_{10}\omega_7^3 v_2^2 + 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3 v_2^2 +$
$6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}\omega_7^3 - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 4\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}^2\omega_7^3 + 36\omega_{19}\omega_{10}\omega_7^2\omega_{23}v_2^2 -$
$36\omega_{19}\omega_{10}^2\omega_7^3 v_2^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3 v_2^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 c_s^2 - 12\omega_{19}\omega_{10}^2\omega_7^3 c_s^2 - 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_{23}c_s^2 -$
$18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2 - 18\omega_{16}\omega_{10}^2\omega_7^3 v_2^2 + 36\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}v_2^2 - 12\omega_{19}\omega_{10}^2\omega_7^2 + 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2 - 6\omega_{16}\omega_{10}^2\omega_7^3 c_s^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 +$
$18\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}^2\omega_7^2 c_s^2 - 24\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 24\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 + 36\omega_{19}\omega_{10}^2\omega_7^2 v_2^2 +$
$12\omega_{19}\omega_{10}^2\omega_7\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 36\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 + 36\omega_{19}\omega_{10}^2\omega_7\omega_{23}v_2^2 - 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3 - 36\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 -$
$12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 + 12\omega_{16}\omega_{10}^2\omega_7^2 c_s^2 + 36\omega_{16}\omega_{10}^2\omega_7^2 v_2^2$

$C_{26} = \omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 v_3^2\omega_{23} + 36\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}c_s^2 - 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23} - 6\omega_{11}\omega_{19}^2\omega_{16}\omega_7^2 v_3^2 + 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3^2 - 6\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 -$
$36\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 12\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7 v_3^2 + 18\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 - 36\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2 - 36\omega_{11}\omega_{19}^2\omega_{10}\omega_7^2 c_s^2 - 36\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 c_s^2 +$
$12\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23} - 12\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_{23} - 12\omega_{11}\omega_{19}^2\omega_{10}\omega_7^2 v_3^2 - 36\omega_{19}^2\omega_7^2\omega_{23}c_s^2 - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}c_s^2 + 6\omega_{11}\omega_{16}\omega_{10}\omega_7^2 v_3^2\omega_{23} +$

$12\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7 + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7 v_3^2\omega_{23} - 3\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2 v_3^2\omega_{23} + 12\omega_{19}^2\omega_{10}\omega_7^2 v_3^2\omega_{23} - 36\omega_{11}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 + 12\omega_{11}\omega_{16}\omega_{10}\omega_7\omega_{23} +$
$36\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7 c_s^2 + 12\omega_{19}^2\omega_{10}\omega_7\omega_{23} - 18\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} + 54\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 18\omega_{11}\omega_{19}^2\omega_{16}\omega_7^2 c_s^2 - 36\omega_{19}^2\omega_{10}\omega_7\omega_{23}c_s^2 -$
$15\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 + 6\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{19}^2\omega_7^2 v_3^2\omega_{23} - 12\omega_{19}^2\omega_{16}\omega_{10}v_3^2\omega_{23} - 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23} - 12\omega_{11}\omega_{19}^2\omega_7^2 + 3\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} -$
$18\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^2 - 6\omega_{11}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - \omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 18\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3^2\omega_{23} - 12\omega_{19}^2\omega_{10}\omega_7 v_3^2\omega_{23} - 12\omega_{11}\omega_{19}^2\omega_{10}\omega_7 -$
$5\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 v_3^2\omega_{23} + 18\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 c_s^2 - 12\omega_{11}\omega_{16}\omega_{10}\omega_7 v_3^2\omega_{23} + 12\omega_{11}\omega_{19}^2\omega_{10}\omega_7 v_3^2 + 54\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 9\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 +$
$36\omega_{11}\omega_{19}^2\omega_7^2 c_s^2 + 36\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2 + 18\omega_{11}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 12\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7 v_3^2\omega_{23} + 6\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 v_3^2 + 3\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 +$
$12\omega_{11}\omega_{19}^2\omega_{16}\omega_{10}v_3^2\omega_{23} + 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_{23} - 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} + 12\omega_{11}\omega_{19}^2\omega_{10}\omega_7^2 + 36\omega_{11}\omega_{19}^2\omega_{10}\omega_7 c_s^2 + 12\omega_{11}\omega_{19}^2\omega_7^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_7^2 v_3^2\omega_{23} -$
$12\omega_{11}\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23} + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_{23} + 12\omega_{19}^2\omega_7^2\omega_{23} - 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7 + 6\omega_{11}\omega_{19}^2\omega_{16}\omega_7^2 + 5\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 6\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2 v_3^2$

$C_{27} = -\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}\omega_7^2\omega_{23} + 6\omega_{11}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 - 36\omega_{19}\omega_{16}\omega_{10}\omega_7 v_3^2\omega_{23} + 6\omega_{11}\omega_{19}\omega_{16}\omega_7^3 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} -$
$12\omega_{11}\omega_{19}\omega_{10}\omega_7^2 + 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 + 12\omega_{11}\omega_{19}\omega_7^3 c_s^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} + 12\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2 + 12\omega_{11}\omega_{19}\omega_{10}\omega_7^3 -$
$12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2 + 36\omega_{11}\omega_{19}\omega_7^3 v_3^2 - 12\omega_{19}\omega_{10}\omega_7^3\omega_{23} - 12\omega_{11}\omega_{19}\omega_7^3 - 36\omega_{19}\omega_{10}\omega_7^2 v_3^2\omega_{23} + 18\omega_{19}\omega_{16}\omega_7^3 v_3^2\omega_{23} -$
$54\omega_{11}\omega_{16}\omega_{10}\omega_7^2 v_3^2\omega_{23} - 3\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2 v_3^2\omega_{23} + 12\omega_{19}\omega_7^3\omega_{23} + 12\omega_{11}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 12\omega_{11}\omega_{16}\omega_{10}\omega_7\omega_{23} - 12\omega_{19}\omega_7^3\omega_{23}c_s^2 -$
$15\omega_{19}\omega_{16}\omega_{10}\omega_7^3 v_3^2\omega_{23} + 18\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 12\omega_{11}\omega_{16}\omega_{10}\omega_7^2 + 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2 + 12\omega_{11}\omega_{16}\omega_{10}\omega_7^2 c_s^2 +$
$\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^2 - 36\omega_{11}\omega_{19}\omega_{10}\omega_7^3 v_3^2 + 18\omega_{11}\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 5\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 18\omega_{11}\omega_{16}\omega_{10}\omega_7^3 v_3^2 +$
$18\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^3 v_3^2 + 12\omega_{11}\omega_{19}\omega_{10}\omega_7^2 c_s^2 + 36\omega_{11}\omega_{16}\omega_{10}\omega_7 v_3^2\omega_{23} - 36\omega_{19}\omega_7^3 v_3^2\omega_{23} + 6\omega_{11}\omega_{16}\omega_{10}\omega_7^3 - 5\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 -$
$6\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^3 - 5\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 6\omega_{11}\omega_{19}\omega_{16}\omega_7^3 c_s^2 - 18\omega_{11}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 + 54\omega_{19}\omega_{16}\omega_{10}\omega_7^2 v_3^2\omega_{23} -$
$18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 6\omega_{11}\omega_{16}\omega_{10}\omega_7^3 c_s^2 - 6\omega_{11}\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 36\omega_{11}\omega_{19}\omega_{10}\omega_7^2 v_3^2 + 6\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^3 c_s^2 + 18\omega_{11}\omega_{16}\omega_{10}\omega_7^3 v_3^2\omega_{23} -$
$18\omega_{11}\omega_{19}\omega_{16}\omega_7^3 v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 + 36\omega_{19}\omega_{10}\omega_7^3 v_3^2\omega_{23} + 36\omega_{11}\omega_{16}\omega_{10}\omega_7^2 v_3^2 - 12\omega_{11}\omega_{19}\omega_{10}\omega_7^3 c_s^2 - 36\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2 v_3^2$

$C_{28} = 3\omega_{19}^2\omega_7^3 v_3^4 + 12\omega_{19}^2\omega_7 c_s^2 + 144\omega_{19}\omega_7^2 v_3^2 c_s^2 + 24\omega_{19}\omega_7 c_s^4 + 30\omega_{19}\omega_7^3 v_3^2 + 24\omega_{19}\omega_7^2 c_s^2 + 36\omega_7^3 v_3^4 + 24\omega_{19}^2\omega_7^2 c_s^4 + 6\omega_{19}^2\omega_7^3 v_3^2 c_s^2 - 72\omega_{19}\omega_7^2 v_3^2 -$
$36\omega_{19}^2\omega_7 v_3^2 c_s^2 + 108\omega_7^3 v_3^2 c_s^2 - 12\omega_{19}^2\omega_7^2 v_3^4 - 3\omega_{19}^2\omega_7^3 c_s^4 - 72\omega_7^2 v_3^4 - 6\omega_{19}\omega_7^3 c_s^2 - 12\omega_{19}^2\omega_7^2 v_3^2 c_s^2 + 12\omega_{19}^2\omega_7^2 v_3^2 + 72\omega_{19}\omega_7^2 v_3^4 + 6\omega_{19}\omega_7^3 c_s^4 - 72\omega_{19}\omega_7^3 v_3^2 c_s^2 +$
$24\omega_{19}^2 c_s^4 + 72\omega_7^2 v_3^2 + \omega_{19}^2\omega_7^3 c_s^2 - 24\omega_{19}\omega_7 c_s^2 - 30\omega_{19}\omega_7^3 v_3^4 - 3\omega_{19}^2\omega_7^3 v_3^2 - 48\omega_{19}^2\omega_7 c_s^4 + 72\omega_{19}\omega_7 v_3^2 c_s^2 - 8\omega_{19}^2\omega_7^2 c_s^2 - 36\omega_7^3 v_3^2 - 216\omega_7^2 v_3^2 c_s^2 - 24\omega_{19}\omega_7^2 c_s^4$

2.5.5 Conservation of momentum: ρv_3

$$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{\delta_l v_3 v_1}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\rho\delta_l v_3}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho\delta_l v_1}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{\delta_l v_3 v_2}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{\rho\delta_l v_3}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\rho\delta_l v_2}{\delta_t}\frac{\partial v_3}{\partial x_2} + (c_s^2+v_3^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} +$$
$$\frac{2\rho\delta_l v_3}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_6)\frac{\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_7)\frac{\delta_l^2 c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2+\omega_7)\frac{\delta_l^2 c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3}$$
$$+ (-2+\omega_{11}+4c_s^2-2\omega_{11}c_s^2-3\omega_{11}v_3^2+6v_3^2)\frac{\delta_l^2}{\omega_{11}\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + (2-\omega_{11})\frac{3\rho\delta_l^2 v_3}{\omega_{11}\delta_t}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_6)\frac{\rho\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} +$$
$$(-2+\omega_7)\frac{\rho\delta_l^2 c_s^2}{2\delta_t\omega_7}\frac{\partial^2 v_3}{\partial x_2^2} + (-2+\omega_6)\frac{\rho\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + (-2+\omega_7)\frac{\rho\delta_l^2 c_s^2}{2\delta_t\omega_7}\frac{\partial^2 v_2}{\partial x_2\partial x_3} +$$
$$(-2+\omega_{11}+6c_s^2-3\omega_{11}c_s^2-\omega_{11}v_3^2+2v_3^2)\frac{\delta_l^2 v_3}{2\omega_{11}\delta_t}\frac{\partial^2\rho}{\partial x_3^2} + (-2+\omega_{11}+2c_s^2-\omega_{11}c_s^2-3\omega_{11}v_3^2+6v_3^2)\frac{\rho\delta_l^2}{2\omega_{11}\delta_t}\frac{\partial^2 v_3}{\partial x_3^2} +$$
$$(-1+3c_s^2+v_1^2)\frac{\delta_l^3 v_3 v_1}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+c_s^2+3v_1^2)\frac{\rho\delta_l^3 v_3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_1\frac{\rho\delta_l^3 v_1}{6\omega_6\delta_t\omega_{13}}\frac{\partial^3 v_3}{\partial x_1^3} - \frac{\rho\delta_l^3 v_3 c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{\rho\delta_l^3 v_3 c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} +$$
$$(-1+v_2^2+3c_s^2)\frac{\delta_l^3 v_3 v_2}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-1+3v_2^2+c_s^2)\frac{\rho\delta_l^3 v_3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_2\frac{\rho\delta_l^3 v_2}{6\delta_t\omega_{16}\omega_7}\frac{\partial^3 v_3}{\partial x_2^3} + (-12-\omega_6^2+12\omega_6)\frac{\delta_l^3 c_s^4}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} -$$
$$\frac{\rho\delta_l^3 v_3 c_s^2}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + (-12-\omega_7^2+12\omega_7)\frac{\delta_l^3 c_s^4}{6\delta_t\omega_7^2}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} - \frac{\rho\delta_l^3 v_3 c_s^2}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + C_3\frac{\rho\delta_l^3 v_3}{12\omega_{11}^2\omega_{18}\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} +$$
$$C_4\frac{\rho\delta_l^3 v_3}{12\omega_{11}^2\omega_{19}\delta_t\omega_7}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C_5\frac{\delta_l^3}{12\omega_{11}^2\delta_t}\frac{\partial^3\rho}{\partial x_3^3} +$$
$$(-24+24\omega_{11}+36c_s^2-36\omega_{11}c_s^2-60\omega_{11}v_3^2+60v_3^2+11\omega_{11}^2v_3^2+5\omega_{11}^2c_s^2-4\omega_{11}^2)\frac{\rho\delta_l^3 v_3}{6\omega_{11}^2\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$(-2c_s^2-6v_1^2-3\omega_9v_1^4+24c_s^2v_1^2-\omega_9c_s^4+3\omega_9v_1^2+\omega_9c_s^2-12\omega_9c_s^2v_1^2+2c_s^4+6v_1^4)\frac{\delta_l^4 v_3}{24\omega_9\delta_t}\frac{\partial^4\rho}{\partial x_1^4} +$$
$$(-4+6c_s^2+10v_1^2+2\omega_9-5\omega_9v_1^2-3\omega_9c_s^2)\frac{\rho\delta_l^4 v_3 v_1}{12\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_6\frac{\rho\delta_l^4}{24\omega_6^3\delta_t\omega_{13}^2}\frac{\partial^4 v_3}{\partial x_1^4} +$$
$$(3\omega_9\omega_{12}c_s^2+\omega_9\omega_{12}v_1^2+3\omega_9-\omega_{12}-3\omega_9v_1^2-9\omega_9c_s^2+3\omega_{12}c_s^2-\omega_9\omega_{12}+\omega_{12}v_1^2)\frac{\rho\delta_l^4 v_3 v_1}{12\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} +$$
$$(-2+\omega_5)\frac{\delta_l^4 v_3 c_s^4}{6\omega_5\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_7\frac{\rho\delta_l^4 c_s^4}{2\omega_{17}\omega_{14}\omega_8\omega_6^2\delta_t\omega_{16}\omega_{13}\omega_7^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} +$$
$$(3\omega_{15}\omega_{10}c_s^2+\omega_{15}\omega_{10}v_2^2-\omega_{15}\omega_{10}-\omega_{15}+3\omega_{15}c_s^2+\omega_{15}v_2^2+3\omega_{10}-9\omega_{10}c_s^2-3\omega_{10}v_2^2)\frac{\rho\delta_l^4 v_3 v_2}{12\omega_{15}\delta_t\omega_{10}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$(-6v_2^2-2c_s^2-\omega_{10}c_s^4-3\omega_{10}v_2^4-12\omega_{10}v_2^2c_s^2+24v_2^2c_s^2+6v_2^4+2c_s^4+\omega_{10}c_s^2+3\omega_{10}v_2^2)\frac{\delta_l^4 v_3}{24\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_2^4} +$$
$$(-4+10v_2^2+6c_s^2+2\omega_{10}-3\omega_{10}c_s^2-5\omega_{10}v_2^2)\frac{\rho\delta_l^4 v_3 v_2}{12\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^4} + C_8\frac{\rho\delta_l^4}{24\delta_t\omega_{16}^2\omega_7^3}\frac{\partial^4 v_3}{\partial x_2^4} + C_9\frac{\delta_l^4 c_s^2 v_1}{12\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\delta_t\omega_{13}^2}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} +$$
$$C_{10}\frac{\rho\delta_l^4 c_s^2}{12\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}\delta_t\omega_{13}}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} +$$
$$(3\omega_{13}c_s^2+\omega_{13}v_1^2+3\omega_9+3\omega_9\omega_{13}c_s^2-\omega_9\omega_{13}-3\omega_9v_1^2+\omega_9\omega_{13}v_1^2-9\omega_9c_s^2-\omega_{13})\frac{\rho\delta_l^4 v_3 v_1}{12\omega_9\delta_t\omega_{13}}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$

$$C_{11}\frac{\delta_l^4}{2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7\omega_{20}}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{12}\frac{\rho\delta_l^4}{2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7\omega_{20}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{13}\frac{\rho\delta_l^4}{12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7^2\omega_{20}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C_{14}\frac{\rho\delta_t^4 v_3}{\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7\omega_{20}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{15}\frac{\delta_l^4}{2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\delta_t\omega_{16}\omega_7\omega_{23}\omega_{20}}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{16}\frac{\rho\delta_l^4}{12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{20}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{17}\frac{\rho\delta_t^4 v_2}{\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\delta_t\omega_{16}\omega_7\omega_{23}\omega_{20}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C_{18}\frac{\rho\delta_l^4}{2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\delta_t\omega_{16}\omega_7\omega_{23}\omega_{20}}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{19}\frac{\delta_l^4 v_2 c_s^2}{12\omega_{11}\omega_{19}\delta_t\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{20}\frac{\rho\delta_l^4 c_s^2}{12\omega_{11}\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} +$$
$$(-\omega_{16}\omega_{10} + 3\omega_{16}\omega_{10}c_s^2 + \omega_{16}\omega_{10}v_2^2 - \omega_{16} + 3\omega_{10} + 3\omega_{16}c_s^2 + \omega_{16}v_2^2 - 9\omega_{10}c_s^2 - 3\omega_{10}v_2^2)\frac{\rho\delta_l^4 v_3 v_2}{12\delta_t\omega_{16}\omega_{10}}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$C_{21}\frac{\delta_l^4 v_3 c_s^2}{12\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22}\delta_t\omega_{13}}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{22}\frac{\rho\delta_l^4 c_s^2}{12\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}\delta_t\omega_{13}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{23}\frac{\delta_l^4 v_3 c_s^2}{12\omega_{11}^3\omega_{19}^2\delta_t\omega_{16}\omega_7^2\omega_{23}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} +$$
$$C_{24}\frac{\rho\delta_l^4 c_s^2}{12\omega_{11}^2\omega_{19}\delta_t\omega_{16}\omega_7^3\omega_{23}}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{25}\frac{\rho\delta_l^4}{12\omega_{11}^3\omega_{18}^2\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{26}\frac{\rho\delta_l^4}{12\omega_{11}^3\omega_{19}^2\delta_t\omega_7^3}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{27}\frac{\delta_l^4 v_3}{12\omega_{11}^3\delta_t}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$C_{28}\frac{\rho\delta_l^4}{12\omega_{11}^3\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

$$C_1 = 6 + 9\omega_{13}c_s^2 - 18c_s^2 - 3\omega_6\omega_{13}c_s^2 + 3\omega_{13}v_1^2 - \omega_6\omega_{13}v_1^2 - 6v_1^2 - 3\omega_6 - 3\omega_{13} + \omega_6\omega_{13} + 3\omega_6 v_1^2 + 9\omega_6 c_s^2$$

$$C_2 = 6 - 6v_2^2 - 18c_s^2 + 9\omega_7 c_s^2 + 3\omega_7 v_2^2 - 3\omega_{16}\omega_7 c_s^2 - \omega_{16}\omega_7 v_2^2 - 3\omega_{16} + 9\omega_{16}c_s^2 + 3\omega_{16}v_2^2 - 3\omega_7 + \omega_{16}\omega_7$$

$$C_3 = -12\omega_{18}\omega_6 - 3\omega_{11}^2\omega_{18}\omega_6 v_3^2 + 18\omega_{11}^2\omega_{18}c_s^2 - 12\omega_{11}\omega_6 v_3^2 + 6\omega_{11}^2\omega_{18}v_3^2 - 11\omega_{11}^2\omega_{18}\omega_6 c_s^2 - 36\omega_{11}\omega_6 c_s^2 + 12\omega_{11}\omega_6 + 3\omega_{11}^2\omega_{18}\omega_6 - 12\omega_{11}^2\omega_6 + 36\omega_{18}\omega_6 c_s^2 + 36\omega_{11}^2\omega_6 c_s^2 + 6\omega_{11}\omega_{18}\omega_6 - 12\omega_{11}^2 v_3^2 - 6\omega_{11}\omega_{18}\omega_6 v_3^2 - 36\omega_{11}^2 c_s^2 + 12\omega_{11}^2 - 18\omega_{11}\omega_{18}\omega_6 c_s^2 - 6\omega_{11}^2\omega_{18} + 12\omega_{18}\omega_6 v_3^2 + 12\omega_{11}^2\omega_6 v_3^2$$

$$C_4 = 12\omega_{11}\omega_7 - 11\omega_{11}^2\omega_{19}\omega_7 c_s^2 + 6\omega_{11}\omega_{19}\omega_7 + 12\omega_{11}^2\omega_7 v_3^2 - 6\omega_{11}^2\omega_{19} + 36\omega_{11}^2\omega_7 c_s^2 - 3\omega_{11}^2\omega_{19}\omega_7 v_3^2 + 6\omega_{11}^2\omega_{19}v_3^2 - 36\omega_{11}\omega_7 c_s^2 - 18\omega_{11}\omega_{19}\omega_7 c_s^2 + 12\omega_{19}\omega_7 v_3^2 - 12\omega_{11}^2 v_3^2 - 12\omega_{19}\omega_7 - 36\omega_{11}^2 c_s^2 + 12\omega_{11}^2 + 3\omega_{11}^2\omega_{19}\omega_7 + 36\omega_{19}\omega_7 c_s^2 - 12\omega_{11}^2\omega_7 + 18\omega_{11}^2\omega_{19}c_s^2 - 12\omega_{11}\omega_7 v_3^2 - 6\omega_{11}\omega_{19}\omega_7 v_3^2$$

$$C_5 = -144\omega_{11}v_3^2 c_s^2 + \omega_{11}^2 c_s^4 - 12c_s^2 + 12\omega_{11}c_s^2 + 36\omega_{11}v_3^2 - 36v_3^2 + 7\omega_{11}^2 v_3^4 - 36\omega_{11}v_3^4 + 144v_3^2 c_s^2 + 36v_3^4 - 7\omega_{11}^2 v_3^2 - \omega_{11}^2 c_s^2 + 24\omega_{11}^2 v_3^2 c_s^2 + 12c_s^4 - 12\omega_{11}c_s^4$$

$$C_6 = -24\omega_6^2\omega_{13}c_s^4 + 144\omega_6^2\omega_{13}c_s^2 v_1^2 + 12\omega_6^2\omega_{13}^2 v_1^2 - 24\omega_6\omega_{13}c_s^2 + 72\omega_6^2\omega_{13}v_1^4 - 48\omega_6\omega_{13}^2 c_s^4 + 108\omega_6^3 c_s^2 v_1^2 + 24\omega_{13}^2 c_s^4 - 8\omega_6^2\omega_{13}^2 c_s^2 + 72\omega_6^2 v_1^2 - 36\omega_6\omega_{13}^2 c_s^2 v_1^2 + 30\omega_6^3\omega_{13}v_1^2 - 3\omega_6^3\omega_{13}^2 c_s^4 - 6\omega_6^3\omega_{13}c_s^2 - 36\omega_6^3 v_1^2 + 3\omega_6^3\omega_{13}^2 v_1^4 - 72\omega_6^3\omega_{13}c_s^2 v_1^2 + \omega_6^3\omega_{13}^2 c_s^2 + 72\omega_6\omega_{13}c_s^2 v_1^2 - 30\omega_6^3\omega_{13}v_1^4 - 216\omega_6^2 c_s^2 v_1^2 - 3\omega_6^3\omega_{13}^2 v_1^2 + 6\omega_6^3\omega_{13}^2 c_s^2 v_1^2 + 6\omega_6^3\omega_{13}c_s^4 + 36\omega_6^3 v_1^4 - 12\omega_6^2\omega_{13}^2 v_1^4 + 24\omega_6\omega_{13}c_s^4 + 24\omega_6^2\omega_{13}c_s^2 - 12\omega_6^2\omega_{13}^2 c_s^2 v_1^2 + 24\omega_6^2\omega_{13}^2 c_s^4 - 72\omega_6^2 v_1^4 - 72\omega_6^2\omega_{13}v_1^2 + 12\omega_6\omega_{13}^2 c_s^2$$

$$C_7 = -\omega_{17}\omega_{14}\omega_8\omega_{16}\omega_{13}\omega_7^2 + 2\omega_{17}\omega_8\omega_6\omega_{16}\omega_{13}\omega_7^2 - 2\omega_{17}\omega_8\omega_6\omega_{16}\omega_7^2 - \omega_{17}\omega_{14}\omega_8\omega_6^2\omega_{16}\omega_7 + 2\omega_{17}\omega_6^2\omega_{16}\omega_{13}\omega_7^2 - 6\omega_{17}\omega_{14}\omega_8\omega_6\omega_{16}\omega_{13}\omega_7 - \omega_{17}\omega_{14}\omega_8\omega_6^2\omega_{16}\omega_{13} + 2\omega_{17}\omega_{14}\omega_8\omega_6\omega_{13}\omega_7 - \omega_{14}\omega_8\omega_6^2\omega_{16}\omega_{13}\omega_7^2 + 2\omega_{17}\omega_{14}\omega_6\omega_{16}\omega_{13}\omega_7^2 - 2\omega_{14}\omega_6\omega_{16}\omega_{13}\omega_7^2 + 2\omega_{14}\omega_8\omega_6^2\omega_{16}\omega_{13}\omega_7 - \omega_{17}\omega_{14}\omega_8\omega_6\omega_{13}\omega_7^2 + 2\omega_{17}\omega_{14}\omega_8\omega_{16}\omega_{13}\omega_7 + \omega_{17}\omega_{14}\omega_8\omega_6\omega_{16}\omega_{13}\omega_7^2 - 2\omega_{17}\omega_6^2\omega_{16}\omega_{13}\omega_7 - 2\omega_{17}\omega_6\omega_{16}\omega_{13}\omega_7^2 + \omega_{17}\omega_{14}\omega_8\omega_6^2\omega_{16}\omega_{13}\omega_7 - \omega_{17}\omega_8\omega_6^2\omega_{16}\omega_{13}\omega_7^2 - 2\omega_{14}\omega_6^2\omega_{16}\omega_{13}\omega_7 - 2\omega_{17}\omega_{14}\omega_6^2\omega_{16}\omega_{13}\omega_7^2 - 2\omega_{14}\omega_8\omega_6^2\omega_{13}\omega_7 + \omega_{14}\omega_8\omega_6\omega_{16}\omega_{13}\omega_7^2 + 2\omega_{17}\omega_{14}\omega_6^2\omega_{16}\omega_{13}\omega_7 + \omega_{17}\omega_8\omega_6^2\omega_{16}\omega_7^2 + 2\omega_{17}\omega_{14}\omega_8\omega_6\omega_{16}\omega_7 + \omega_{14}\omega_8\omega_6^2\omega_{13}\omega_7^2 + 2\omega_{14}\omega_6^2\omega_{16}\omega_{13}\omega_7^2 + 2\omega_{17}\omega_{14}\omega_8\omega_6\omega_{16}\omega_{13} + \omega_{17}\omega_8\omega_6^2\omega_{16}\omega_{13}\omega_7$$

$$C_8 = -72\omega_7^2 v_2^4 + \omega_{16}^2\omega_7^3 c_s^2 - 216\omega_7^2 v_2^2 c_s^2 - 3\omega_{16}^2\omega_7^3 v_2^2 + 72\omega_{16}\omega_7 v_2^2 c_s^2 - 30\omega_{16}\omega_7^3 v_2^4 + 6\omega_{16}\omega_7^3 c_s^4 - 48\omega_{16}^2\omega_7 c_s^4 - 24\omega_{16}\omega_7 c_s^2 - 72\omega_{16}\omega_7^3 v_2^2 c_s^2 + 36\omega_7^3 v_2^4 - 24\omega_{16}\omega_7^2 c_s^4 + 72\omega_{16}\omega_7^2 v_2^4 + 12\omega_{16}^2\omega_7^2 v_2^2 - 12\omega_{16}^2\omega_7^2 v_2^2 c_s^2 - 8\omega_{16}^2\omega_7^2 c_s^2 + 24\omega_{16}\omega_7 c_s^4 - 36\omega_7^3 v_2^2 + 12\omega_{16}^2\omega_7 c_s^2 + 108\omega_7^3 v_2^2 c_s^2 - 12\omega_{16}^2\omega_7^2 v_2^4 + 24\omega_{16}^2\omega_7^2 c_s^4 - 36\omega_{16}^2\omega_7 v_2^2 c_s^2 + 24\omega_{16}\omega_7^2 c_s^2 - 72\omega_{16}\omega_7^2 v_2^2 + 6\omega_{16}^2\omega_7^3 v_2^2 c_s^2 + 72\omega_7^2 v_2^2 + 30\omega_{16}\omega_7^3 v_2^2 + 144\omega_{16}\omega_7^2 v_2^2 c_s^2 - 6\omega_{16}\omega_7^3 c_s^2 - 3\omega_{16}^2\omega_7^3 c_s^4 + 24\omega_{16}^2 c_s^4 + 3\omega_{16}^2\omega_7^3 v_2^4$$

$$C_9 = 36\omega_9\omega_6^2\omega_{13}^2 c_s^2 + 6\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 v_1^2 - \omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2 - 12\omega_{11}\omega_{18}\omega_{22}\omega_{13}^2 v_1^2 - 12\omega_{11}\omega_{18}\omega_9\omega_{22}\omega_{13}v_1^2 - 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{13} - 36\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}^2 c_s^2 + 12\omega_9\omega_6^2\omega_{13}^2 v_1^2 + 6\omega_{18}\omega_9\omega_6^2\omega_{13}^2 + 18\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 c_s^2 - 36\omega_{11}\omega_{18}\omega_{22}\omega_{13}^2 c_s^2 + 12\omega_{11}\omega_6\omega_{22}\omega_{13}^2 - 36\omega_{11}\omega_{18}\omega_9\omega_{22}\omega_{13}c_s^2 - 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}^2 v_1^2 - 18\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{13}^2 - 36\omega_{11}\omega_{18}\omega_9\omega_6\omega_{13}^2 c_s^2 + 12\omega_{11}\omega_9\omega_6\omega_{13}^2 v_1^2 - 3\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}v_1^2 - 6\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13}v_1^2 + 18\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2 + 36\omega_{11}\omega_6^2\omega_{22}\omega_{13}^2 c_s^2 - 5\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 v_1^2 - 6\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 + 12\omega_{11}\omega_{18}\omega_{22}\omega_{13}^2 - 9\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}c_s^2 + 36\omega_{11}\omega_9\omega_6\omega_{13}^2 c_s^2 - 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{13}^2 v_1^2 + 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{13}^2 + 6\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 - 6\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 18\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13}c_s^2 - 15\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 c_s^2 + 12\omega_{11}\omega_6^2\omega_{22}\omega_{13}^2 v_1^2 + 3\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} - 12\omega_{11}\omega_9\omega_6\omega_{13}^2 + 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{13}v_1^2 + 3\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2 c_s^2 - 36\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 + 18\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13}^2 c_s^2 + 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 12\omega_{11}\omega_9\omega_6^2\omega_{13}^2 v_1^2 - 6\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13}^2 + 12\omega_{11}\omega_9\omega_6^2\omega_{13}^2 - 12\omega_{11}\omega_{18}\omega_9\omega_{22}\omega_{13}^2 + \omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}^2 v_1^2 - 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 + 36\omega_{11}\omega_{18}\omega_9\omega_6\omega_{13}c_s^2 - 36\omega_{11}\omega_9\omega_6^2\omega_{13}^2 c_s^2 + 6\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13}^2 v_1^2 + 12\omega_6^2\omega_{22}\omega_{13}^2 - 18\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13} + 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}^2 - 12\omega_9\omega_6^2\omega_{13}^2 - 36\omega_{11}\omega_6\omega_{22}\omega_{13}^2 c_s^2 + 18\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{13}^2 v_1^2 + 36\omega_{11}\omega_{18}\omega_9\omega_{22}\omega_{13}^2 c_s^2 + 12\omega_{11}\omega_{18}\omega_9\omega_{22}\omega_{13} - 12\omega_6^2\omega_{22}\omega_{13}^2 v_1^2 + 18\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}v_1^2 - 18\omega_{18}\omega_9\omega_6^2\omega_{13}^2 c_s^2 - 12\omega_{11}\omega_6^2\omega_{22}\omega_{13}^2 + 54\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{13}^2 c_s^2 - 12\omega_{11}\omega_6\omega_{22}\omega_{13}^2 v_1^2 + 5\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13}^2 + 12\omega_{11}\omega_{18}\omega_9\omega_{22}\omega_{13}^2 v_1^2 - 36\omega_6^2\omega_{22}\omega_{13}^2 c_s^2 - 6\omega_{18}\omega_9\omega_6^2\omega_{13}v_1^2 + 54\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2 + 6\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13}$$

$$C_{10} = -\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}\omega_{13}c_s^2 + 6\omega_{18}\omega_9\omega_6^3\omega_{13} - 12\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2 - 12\omega_{11}\omega_6^3\omega_{22}\omega_{13} - 36\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{13}v_1^2 - 12\omega_{11}\omega_{18}\omega_9\omega_{22}\omega_{13}c_s^2 + 5\omega_{11}\omega_{18}\omega_6^3\omega_{22}\omega_{13} - 6\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22} - 3\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}v_1^2 - 36\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13}v_1^2 - 18\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2 + 12\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{13} + 12\omega_{11}\omega_9\omega_6^2\omega_{13}c_s^2 - 36\omega_6^3\omega_{22}\omega_{13}v_1^2 + 12\omega_9\omega_6^3\omega_{13}c_s^2 - 5\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13}c_s^2 + 36\omega_{11}\omega_9\omega_6^2\omega_{13}v_1^2 - 54\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}v_1^2 + 18\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 12\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13}c_s^2 - 12\omega_6^3\omega_{22}\omega_{13}c_s^2 + 12\omega_6^3\omega_{22}\omega_{13} + 36\omega_9\omega_6^3\omega_{13}v_1^2 + \omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\omega_{13} + 6\omega_{11}\omega_{18}\omega_9\omega_6^3 - 18\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13} + 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 - 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 18\omega_{18}\omega_6^3\omega_{22}\omega_{13}v_1^2 - 6\omega_{18}\omega_9\omega_6^3\omega_{13}c_s^2 - 6\omega_{11}\omega_{18}\omega_9\omega_6^3 c_s^2 + 12\omega_{11}\omega_6^2\omega_{22}\omega_{13} - 36\omega_{11}\omega_6^2\omega_{22}\omega_{13}v_1^2 + 18\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2 - 6\omega_{18}\omega_6^3\omega_{22}\omega_{13} + 36\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}v_1^2 - 6\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{13} + 6\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2 - 12\omega_{11}\omega_{18}\omega_9\omega_6^2 - 18\omega_{18}\omega_9\omega_6^3\omega_{13}v_1^2 - 18\omega_{11}\omega_{18}\omega_9\omega_6^3 v_1^2 + 12\omega_{11}\omega_9\omega_6^3\omega_{13} + 54\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13}v_1^2 - 12\omega_{11}\omega_6^2\omega_{22}\omega_{13}c_s^2 +$$

$12\omega_{11}\omega_{18}\omega_9\omega_6^2c_s^2 - 15\omega_{11}\omega_{18}\omega_6^3\omega_{22}\omega_{13}v_1^2 + 6\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{13}c_s^2 - 36\omega_{11}\omega_9\omega_6^3\omega_{13}v_1^2 + 12\omega_{11}\omega_6^3\omega_{22}\omega_{13}c_s^2 + 18\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}v_1^2 -$
$12\omega_9\omega_6^3\omega_{13} + 36\omega_{11}\omega_{18}\omega_9\omega_6^2v_1^2 - 12\omega_{11}\omega_9\omega_6^2\omega_{13} + 6\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}c_s^2 - 12\omega_{11}\omega_9\omega_6^3\omega_{13}c_s^2 + 36\omega_{11}\omega_6^3\omega_{22}\omega_{13}v_1^2 - 5\omega_{11}\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2 +$
$18\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{13}v_1^2 + 18\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}\omega_{13}c_s^2 + 12\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{13}$

$C_{11} = -2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1^2 - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2 + 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1^2 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2v_1 + 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 +$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2c_s^2\omega_{20} +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} -$
$2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2v_1 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 +$
$2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} +$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2v_1^2 +$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2v_1^2 +$
$2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1^2 -$
$2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2v_1 - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2c_s^2\omega_{20} -$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2v_1 +$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2v_1 -$
$2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2 -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2c_s^2v_1 -$
$2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2v_1 - 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2c_s^2\omega_{20} +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2c_s^2 - 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1^2 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2v_1^2 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2c_s^2 - 2\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2v_1 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2c_s^2v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2v_1^2 +$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2v_1 - 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 +$
$2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2\omega_{20}v_1^2 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1^2 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2 - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2v_1^2 - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2^2c_s^2v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2v_1 + 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2v_1 - 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2c_s^2v_1 + 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2c_s^2v_1 -$
$2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20}v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2\omega_{20}v_1 -$

$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2c_s^2\omega_{20} + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 - 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} + 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2v_1 + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1^2 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2\omega_{20}v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2v_1 +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2v_1^2 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2v_1 + 2\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 -$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 -$
$2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2v_1^2 +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2v_1 +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1^2 +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2c_s^2 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2c_s^2\omega_{20} + 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20}v_1 +$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2c_s^2\omega_{20} + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1^2 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1^2 -$
$2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1^2$

$C_{12} = 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2c_s^2 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2^2c_s^2\omega_{20} + 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} - 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} -$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2 + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2^2\omega_{20} - 4\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 +$
$4\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2 +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} -$
$4\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20} + 4\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2^2 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 4\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 -$
$4\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2v_1 - 4\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 4\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} +$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 +$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} + 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20} -$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - 4\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} - 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20} - 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2v_1 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} -$
$2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2 + 4\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2 +$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2 - 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} - 4\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2 + 4\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2c_s^2\omega_{20} -$
$2\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} -$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2 - 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2\omega_{20} +$
$4\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 -$
$4\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} + 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2v_1 + 4\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1 -$
$2\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20} - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2v_2^2\omega_{20} + 4\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2v_1 - 4\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20}v_1 + 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2\omega_{20}v_1 -$
$2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2c_s^2\omega_{20} + 4\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2 +$
$2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} +$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} +$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20} - 4\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2\omega_{20} +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2c_s^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} + 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 +$
$2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20} + 4\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1 - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_3^2v_2^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} -$
$4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2c_s^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2 - 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2v_2^2\omega_{20} + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2c_s^2\omega_{20} -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} - 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2^2c_s^2\omega_{20} + 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20} +$
$4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2v_2\omega_{20} - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2 - 4\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1 + 4\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20} + 4\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 -$
$4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2v_1 + 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20} + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2^2\omega_{20} +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2c_s^2\omega_{20} - 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_3^2v_2^2\omega_{20} + 4\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_3^2v_2\omega_{20}v_1 +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2c_s^2\omega_{20} + 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 + 4\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_3^2v_2v_1 -$

$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2^2 c_s^2 + 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2^2 c_s^2\omega_{20} + 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 -$
$2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2^2 c_s^2 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7 v_2^2 c_s^2\omega_{20} - 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7 v_2 c_s^2\omega_{20}v_1 - 4\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2 c_s^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7 v_2^2 c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2 c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7 v_2^2 c_s^2 + 4\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2 v_1 -$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7 v_2 c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7 v_2^2 c_s^2\omega_{20} - 4\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2 c_s^2 v_1 - 4\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13} v_2 c_s^2\omega_{20}v_1 +$
$4\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7 v_2 c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13} v_3^2 v_2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2^2 c_s^2 + 4\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13} v_2 c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13} v_2^2 c_s^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7 v_3^2 v_2^2\omega_{20} -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} - 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13} v_3^2 c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 + 4\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7 v_3^2 v_2 v_1 -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7 v_2^2 c_s^2\omega_{20} - 2\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2^2 c_s^2\omega_{20} +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 - 4\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 - 4\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 -$
$4\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2 v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2^2 c_s^2 - 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} +$
$4\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2 c_s^2\omega_{20}v_1 - 4\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13} v_3^2 v_2^2\omega_{20} - 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 - 4\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13} v_3^2 v_2\omega_{20}v_1 -$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2^2 c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7 v_3^2 v_2^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7 v_3^2 v_2^2\omega_{20} + 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} +$
$4\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2 c_s^2 v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2^2\omega_{20} +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13} v_2^2 c_s^2\omega_{20} - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7 v_2^2 c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2^2\omega_{20} +$
$2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} + 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2 v_1 + 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 +$
$4\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2 c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2^2 c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7 v_2 c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13} v_2^2 c_s^2 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13} v_3^2 c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2 c_s^2\omega_{20}v_1 +$
$4\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2 v_1 + 4\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13} v_2 c_s^2 v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2^2 c_s^2$

$C_{13} = 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2 v_1 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2 v_2 c_s^2\omega_{20}v_1 + 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2\omega_{20}v_1^2 +$
$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 + 12\omega_{11}\omega_{14}\omega_8\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^4\omega_{20} - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_2 c_s^2 v_1 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2 + 24\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2\omega_{20}v_1 + 12\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^2 v_1^2 +$
$6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2 v_3^2 c_s^2\omega_{20} + 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_1^2 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2 v_3^2 c_s^2\omega_{20} +$
$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2 c_s^2\omega_{20}v_1^2 - 12\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2 c_s^4\omega_{20} + 24\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2 v_1 -$
$24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_2 c_s^2\omega_{20}v_1 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{13}\omega_7^2 v_3^2 c_s^2\omega_{20} - 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7 v_3^2\omega_{20}v_1^2 -$
$24\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2 v_3^2 v_2 v_1 + 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2\omega_{20}v_1 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^4 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 c_s^2\omega_{20} + 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^4\omega_{20} +$
$12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 c_s^2\omega_{20} - 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^2 v_1^2 - 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} +$
$24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2\omega_{20}v_1 + 12\omega_{14}\omega_8\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^4\omega_{20} - 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 c_s^2 +$
$12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 c_s^2\omega_{20} + 10\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^4\omega_{20} -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 c_s^2 - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_2 c_s^2\omega_{20}v_1 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_7^2 v_2 c_s^2\omega_{20}v_1 -$
$24\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2\omega_{20}v_1 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2\omega_{20}v_1 - 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2\omega_{20}v_1^2 +$
$24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2 c_s^2\omega_{20}v_1 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_1^2 - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2 v_3^2 v_2\omega_{20}v_1 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^4 + 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2 + 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2 c_s^2\omega_{20}v_1^2 -$
$6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^4\omega_{20} + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}v_1^2 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{19}\omega_{13}\omega_7^2 v_3^2\omega_{20}v_1^2 -$
$6\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2 v_3^2\omega_{20}v_1^2 + 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2 v_3^2 c_s^2\omega_{20} - 24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2 v_1 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}v_1^2 + 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 + 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{19}\omega_{13}\omega_7^2 v_2 c_s^2\omega_{20}v_1 -$
$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} - 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2 v_3^2\omega_{20}v_1^2 + 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2\omega_{20}v_1^2 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_1^2 - 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}v_1^2 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7 c_s^2 v_1^2 +$
$6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2 c_s^4\omega_{20} - 12\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2\omega_{20}v_1^2 + 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_2 c_s^2\omega_{20}v_1 +$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_1^2 + 24\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_2 c_s^2\omega_{20}v_1 + 12\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 c_s^2\omega_{20} -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^2 v_1^2 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2 v_3^2 v_2\omega_{20}v_1 + 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_2 c_s^2\omega_{20}v_1 +$
$24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_2 c_s^2 v_1 - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{13}\omega_7 v_3^2 v_2 v_1 - 6\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2 v_3^2\omega_{20}v_1^2 -$
$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 c_s^2\omega_{20} - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2 v_3^2\omega_{20}v_1^2 + 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}v_1^2 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2 v_3^2 v_1^2 - 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 c_s^2\omega_{20} - 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2 c_s^2\omega_{20}v_1^2 +$
$12\omega_{14}\omega_8\omega_5\omega_6^3\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}v_1^2 - 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^4 - 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_2 c_s^2\omega_{20}v_1 +$
$24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2\omega_{20}v_1 - 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2 c_s^2 v_1^2 +$
$12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2\omega_{20}v_1 - 24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2 v_1 - 24\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2 v_3^2 v_2\omega_{20}v_1 +$
$24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2 v_2 c_s^2 v_1 - 12\omega_{11}\omega_{14}\omega_8\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^4\omega_{20} - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2 v_2 c_s^2\omega_{20}v_1 +$
$12\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}v_1^2 - 18\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^4\omega_{20} + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 c_s^2 +$
$24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_3^2 v_2 v_1 + 24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2 v_2\omega_{20}v_1 - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_2 c_s^2 v_1 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2 v_2 c_s^2\omega_{20}v_1 - 18\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^4\omega_{20} - 24\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2 v_2 c_s^2 v_1 +$
$6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7 v_3^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2 c_s^4\omega_{20} + 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2 c_s^2 v_1^2 -$

$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_3^2c_s^2 + 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} +$
$24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2v_1^2 + 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} +$
$12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4 - 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 - 24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2c_s^2v_1 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_1^2 + 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_3^2v_2\omega_{20}v_1 + 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_3^2\omega_{20}v_1^2 -$
$12\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4 + 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 +$
$24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 + 24\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_2\omega_{20}v_1 -$
$6\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2v_1^2 + 12\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} -$
$6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{13}\omega_7^2v_3^2\omega_{20}v_1^2 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2v_1^2 +$
$6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 + 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_3^2c_s^2 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2\omega_{20}v_1^2 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 24\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2v_2\omega_{20}v_1 + 12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2\omega_{20}v_1^2 -$
$6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 + 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 +$
$24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1 - 12\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2\omega_{20}v_1^2 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 -$
$6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 + 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_2\omega_{20}v_1 -$
$12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} + 24\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2c_s^2v_1 +$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2 - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_2v_1 + 24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2c_s^2\omega_{20}v_1 +$
$12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_1^2 + 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2c_s^2v_1 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} -$
$6\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} + 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 - 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 +$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_3^2c_s^2 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20} + 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} -$
$2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} - 24\omega_{14}\omega_8\omega_5\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_3^2v_2\omega_{20}v_1 - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} +$
$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2v_3^2v_2\omega_{20}v_1 + 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_3^2v_1^2 - 24\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_2c_s^2v_1 +$
$12\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} - 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4 + 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2\omega_{20}v_1^2 -$
$24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{13}\omega_7^2v_3^2v_2\omega_{20}v_1 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} - 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} -$
$12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_2\omega_{20}v_1 + 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_3^2v_2v_1 - 24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2v_1 +$
$12\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20} + 12\omega_{14}\omega_8\omega_5\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_3^2\omega_{20}v_1^2 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2\omega_{20}v_1 -$
$24\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20}v_1 - 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7^2v_3^2\omega_{20}v_1^2 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} -$
$12\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}c_s^4\omega_{20} - 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_1^2 +$
$6\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2 -$
$12\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_3^2v_2\omega_{20}v_1 +$
$12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_2c_s^2\omega_{20}v_1 - 18\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20} + 12\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2\omega_{20}v_1^2 -$
$24\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_2v_1 + 12\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_1^2 + 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2 -$
$\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} + 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2v_1^2 - 6\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} -$
$24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_2v_1 + 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2v_2c_s^2\omega_{20}v_1 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} -$
$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2\omega_{20}v_1^2 + 24\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2c_s^2\omega_{20}v_1 + 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} -$
$6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} + 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1 - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2 +$
$6\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 + 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20} - 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2\omega_{20} -$
$12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2c_s^2\omega_{20}v_1 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 - 12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2v_1^2 -$
$12\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_1^2 - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{13}\omega_7^2v_2c_s^2\omega_{20}v_1 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2v_1^2 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_2\omega_{20}v_1 + 24\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2c_s^2\omega_{20}v_1 +$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4 - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7v_2c_s^2v_1 + 24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_2v_1 +$
$12\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2c_s^2 - 12\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} - 24\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2c_s^2\omega_{20}v_1 -$
$12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2v_1^2 - 12\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20} + 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_3^2c_s^2\omega_{20} -$
$6\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}v_1^2 - 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^4\omega_{20} - 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2 +$
$12\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4 + 12\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4 + 24\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_3^2v_2\omega_{20}v_1 +$
$6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_3^2\omega_{20}v_1^2 - 6\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\omega_7c_s^4\omega_{20}$

$C_{14} = \omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2v_1^2 + 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2v_1^2 +$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2v_1^2 + 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2v_1 +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} -$
$2\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2c_s^2 +$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2 - 2\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 + 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2v_1^2 + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2v_1^2 -$
$2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2\omega_{20} -$
$\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2v_1^2 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 + 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_2^2\omega_{20}v_1 +$

$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}v_1 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2 +$
$2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} + 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2v_1^2 + 2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2v_1^2 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7v_2c_s^2\omega_{20} -$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 + 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} -$
$2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2v_1 -$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_2\omega_{20}v_1^2 + 2\omega_{11}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2^2\omega_{20}v_1 -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2^2v_1 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} + 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2^2v_1 -$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2v_1 +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} +$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 + \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} -$
$2\omega_{11}\omega_{14}\omega_8\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2\omega_{20}v_1^2 - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} +$
$2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_2c_s^2\omega_{20} +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} - \omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2c_s^2\omega_{20} + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1 -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2c_s^2\omega_{20} + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2v_1 - 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 +$
$2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}v_1 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_2c_s^2\omega_{20} - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2c_s^2 -$
$2\omega_{11}\omega_{14}\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2v_1 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_7v_2\omega_{20}v_1^2 - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2v_1 - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 -$
$2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7v_2^2v_1 - 2\omega_{14}\omega_8\omega_6\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 +$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}v_2^2\omega_{20}v_1 - \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2\omega_{20}v_1^2 + \omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{19}\omega_7v_2\omega_{20}v_1^2 -$
$2\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{13}\omega_7c_s^2v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_7v_2\omega_{20}v_1^2 + 2\omega_{11}\omega_8\omega_{18}\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2v_1 +$
$\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{14}\omega_{18}\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2v_1^2 - 2\omega_{14}\omega_8\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2v_1 + 2\omega_{11}\omega_{14}\omega_8\omega_{22}\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}v_1$

$C_{15} = 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3^2\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}v_2^2v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1^2 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1^2 + 2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1^2 + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 + \omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3c_s^2\omega_{20}v_1^2 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2c_s^2\omega_{20}v_1 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1^2 +$
$\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}v_2^2c_s^2\omega_{20} +$
$2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3^2\omega_{23}c_s^2v_1 + 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1^2 + \omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20}v_1 - \omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3v_2^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2 -$
$\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1^2 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1^2 -$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_2^2c_s^2\omega_{20}v_1 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1^2 + 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3^2\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3^2\omega_{23}v_2^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2v_1 + 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20}v_1 +$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 +$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2c_s^2 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 +$
$\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - \omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 +$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2 -$
$2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}c_s^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3^2\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2 + 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 + \omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} +$
$2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3^2\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2c_s^2\omega_{20} +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1^2 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1^2 + 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} +$

$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - \omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2v_1^2 - 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_2^2c_s^2\omega_{20}v_1 +$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 -$
$2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1^2 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_2^2v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1^2 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_{23}v_2^2c_s^2v_1 + 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}c_s^2\omega_{20}v_1^2 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}v_2^2v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3v_2^2\omega_{20}v_1^2 -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 + 2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1^2 +$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2c_s^2v_1 + 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3^2c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 + \omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2 - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1^2 -$
$\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3v_2^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2v_1 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}c_s^2v_1 -$
$\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - \omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2c_s^2\omega_{20} +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2v_1 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}v_2^2\omega_{20}v_1 -$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - \omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3^2v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2c_s^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1^2 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2 -$
$2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3v_2^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3v_2^2c_s^2\omega_{20} +$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2c_s^2 - 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}c_s^2v_1^2 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2v_2^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3v_2^2\omega_{20}v_1^2 -$
$2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}v_2^2v_1^2 -$
$\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 + \omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2v_1 - \omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3^2\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1^2 + \omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3c_s^2\omega_{20}v_1^2 +$
$\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3^2\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_2^2v_1 + 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{23}v_2^2c_s^2\omega_{20}v_1 + \omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1^2 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}v_2^2v_1 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1^2 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}v_2^2c_s^2 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3v_2^2\omega_{20}v_1^2 +$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3^2c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20}v_1$

$C_{16} = 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20} - 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_2^3\omega_{23}v_2^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2 -$
$24\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2v_1 - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_2^2c_s^2\omega_{20} -$
$6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20} - 18\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} - 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3^2v_2^2\omega_{20} - 24\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3v_2^2\omega_{20}v_1 + 12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} -$
$6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4 - 12\omega_{17}\omega_{11}\omega_8\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2v_2^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} -$
$12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2c_s^2\omega_{20} - 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} +$
$12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3^2\omega_{23}c_s^2 + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3^2c_s^2\omega_{20} -$
$6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3^2c_s^4\omega_{20} -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} -$
$24\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2v_1 - 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} - 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3^2\omega_{23}v_2^2 + 12\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2 -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4 + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2v_1 - 18\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20} +$
$24\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2v_1 + 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20} - 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2v_1 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 12\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2v_2^2\omega_{20} -$

$6\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 + 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2c_s^2 -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2 - 24\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2c_s^2 +$
$12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2c_s^2\omega_{20} - 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2v_1 + 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2 +$
$12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 + 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4 - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$24\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2v_1 - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2v_1 -$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 - 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} +$
$24\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 24\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 - 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3v_2^2\omega_{20}v_1 -$
$6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4 + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3v_2^2\omega_{20}v_1 -$
$12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} +$
$12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2v_1 - 24\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_{23}c_s^4\omega_{20} - 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_2^2c_s^2\omega_{20} - 12\omega_{17}\omega_8\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} -$
$6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} +$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2v_1 + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2 - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3v_2^2\omega_{20}v_1 +$
$24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 - 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} - 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 +$
$12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 - 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4 - 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 -$
$24\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 24\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$24\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3^2v_2^2\omega_{20} - 24\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3^2v_2^2\omega_{20} - 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3\omega_{23}v_2^2v_1 - 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}c_s^2v_1 +$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 + 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3c_s^2\omega_{20}v_1 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_7^2\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_2^2c_s^2\omega_{20} + 10\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 -$
$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^4\omega_{20} + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}c_s^2v_1 + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}v_2^2v_1 +$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2 - 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} -$
$24\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3c_s^2\omega_{20}v_1 - 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}v_2^2v_1 -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20} + 24\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 + 24\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3^2c_s^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 - 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^4 - 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 -$
$12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} + 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} - \omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} +$
$6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2v_2^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} + 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} -$
$12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3v_2^2\omega_{20}v_1 - 12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20} +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_2^2c_s^2\omega_{20} + 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} + 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_2^2c_s^2\omega_{20} + 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4 +$
$12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}v_2^2 - 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} + 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 + 12\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}v_2^2 +$
$6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3v_2^2\omega_{20}v_1 + 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2c_s^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}c_s^2 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} + 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} -$
$12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20} - 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3v_2^2\omega_{20}v_1 +$
$12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 + 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4 + 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2v_1 -$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3c_s^2\omega_{20}v_1 - 18\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3c_s^2\omega_{20}v_1 + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}c_s^2v_1 + 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_2^2c_s^2\omega_{20} +$
$12\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2v_1 - 6\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} -$
$6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2 - 6\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} +$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3c_s^2\omega_{20}v_1 - 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2v_1 + 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} +$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}v_2^2v_1 + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2\omega_{23}v_2^2c_s^2 - 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 + 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2v_1 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 + 6\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3v_2^2\omega_{20}v_1 -$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2v_1 + 12\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^4 - 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} -$
$12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} + 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2 - 6\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2v_2^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 -$
$6\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2c_s^2\omega_{20} - 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} +$
$6\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} - 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_3^2\omega_{23}c_s^2\omega_{20} + 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 24\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 +$
$6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} + 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} - 12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} -$
$12\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4 + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} +$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 - 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 -$
$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^4\omega_{20} + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}c_s^2v_1 + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}v_2^2v_1 +$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2 - 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_6\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} -$
$24\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3c_s^2\omega_{20}v_1 - 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}v_2^2v_1 -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3^2c_s^2\omega_{20} + 24\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2c_s^2\omega_{20} + 24\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3\omega_{23}v_2^2\omega_{20}v_1 - 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} - 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_2^2c_s^2\omega_{20} -$
$24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 12\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} - 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_2^2c_s^2\omega_{20} -$

$24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^2v_2^2c_s^2\omega_{20} + 24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 6\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2\omega_{20} + 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20} + 12\omega_{17}\omega_8\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20} - 24\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 - 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2v_2^2\omega_{20} - 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20} - 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^4 - 24\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}c_s^2v_1 -$
$24\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 - 6\omega_{17}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2\omega_{20} - 24\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3v_3\omega_{23}v_2^2v_1 -$
$12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 + 24\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}c_s^2\omega_{20}v_1 + 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{16}\omega_7^3\omega_{23}v_2^2c_s^2 -$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_3^2c_s^2\omega_{20} - 12\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3\omega_{23}v_2^2\omega_{20}v_1 +$
$12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}c_s^2 + 12\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2 + 12\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3c_s^2\omega_{20}v_1 +$
$6\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2\omega_{20} - 12\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23}v_2^2$

$C_{17} = -2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_1^2 - 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{20}v_1 -$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{20}v_1^2 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3\omega_{23}\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}\omega_{20}v_1^2 + 2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_1 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}v_1 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}v_1^2 + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}v_1 +$
$\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}v_1 +$
$\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3c_s^2\omega_{20} - 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}c_s^2 - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_1^2 - \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2v_1 - 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_1^2 + 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2 + 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}v_1 -$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3c_s^2\omega_{20} + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2 +$
$2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20} + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20} -$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3c_s^2\omega_{20} + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2 +$
$2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20} - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3^2\omega_{23}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}v_1 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20} + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20} - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3c_s^2\omega_{20} -$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3\omega_{23}c_s^2\omega_{20} + \omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3c_s^2\omega_{20} -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3^2\omega_{23}\omega_{20}v_1 + 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3^2\omega_{23}\omega_{20}v_1 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3^2\omega_{23}\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3c_s^2\omega_{20} -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2 - 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2v_1^2 - 4\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1 - 4\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 - 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2v_1^2 -$
$2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 +$

$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2v_1^2 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} - \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 -$
$4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 - \omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2v_1^2 - \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 - 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2 +$
$4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3v_2^2\omega_{20}v_1 + 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2c_s^2 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2v_1^2 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 4\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$4\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 - 4\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2 -$
$2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2v_1^2 - 4\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} -$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}v_1^2 + 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}v_1^2 + 4\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$4\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2\omega_{20}v_1 + 4\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1 + 4\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3v_2^2\omega_{20}v_1 -$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_2^2\omega_{20}v_1^2 + 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 - 4\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_2^2\omega_{20}v_1^2 -$
$4\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_{23}v_2^2c_s^2 +$
$4\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 - 4\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2v_1^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_2^2c_s^2\omega_{20} - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3c_s^2\omega_{20}v_1 - 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 +$
$4\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}c_s^2\omega_{20}v_1 - 4\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_2^2\omega_{20}v_1^2 +$
$4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 - 4\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_2^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_2^2c_s^2\omega_{20} - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3c_s^2\omega_{20}v_1 - 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 +$
$4\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_3\omega_{23}c_s^2\omega_{20}v_1 - 4\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20} + \omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_2^2\omega_{20}v_1^2 +$
$4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 - 4\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_{23}v_2^2v_1^2 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2v_1^2 + 4\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1 -$
$4\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2c_s^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2 + 4\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3c_s^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 + 4\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1 + 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3v_2^2\omega_{20}v_1 -$
$2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 + 4\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3c_s^2\omega_{20}v_1 + 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20} -$
$4\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}c_s^2v_1^2 + 4\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1 + 4\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2v_1 -$
$2\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} -$
$\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{23}v_2^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2v_1^2 + \omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 - 2\omega_{11}\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} - 2\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 -$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2c_s^2 + 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}v_2^2v_1 - \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} - \omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 -$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2v_1^2 - 4\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$4\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3v_2^2\omega_{20}v_1 - 2\omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2 - 2\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}v_1^2 +$
$4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1 + \omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 -$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}v_2^2\omega_{20}v_1^2 - 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_3c_s^2\omega_{20}v_1 + 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}c_s^2v_1 +$
$\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}c_s^2\omega_{20}v_1^2 -$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3v_2^2\omega_{20}v_1 + 4\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 - 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2\omega_{20}v_1^2 -$
$4\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3c_s^2\omega_{20}v_1 +$
$\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 + 4\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_{23}v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3\omega_{23}c_s^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2v_1^2 - 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}c_s^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2v_1^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7c_s^2\omega_{20}v_1^2 - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_2^2c_s^2\omega_{20} - 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3c_s^2\omega_{20}v_1 -$
$4\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_2^2c_s^2\omega_{20} + \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} -$
$4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 - 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2\omega_{20} - 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}v_3v_2^2\omega_{20}v_1 +$
$4\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2 - 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}v_3\omega_{23}v_2^2\omega_{20}v_1 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7v_3\omega_{23}v_2^2\omega_{20}v_1 + 2\omega_{17}\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2\omega_{20}v_1^2 + \omega_{17}\omega_{11}\omega_8\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 +$
$2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2c_s^2 + \omega_{17}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_2^2c_s^2\omega_{20} + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}v_1^2 - 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}v_2^2c_s^2\omega_{20} +$
$4\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}v_3\omega_{23}v_2^2\omega_{20}v_1 + \omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}v_1^2 + 2\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_7v_3v_2^2\omega_{20}v_1 + 4\omega_{17}\omega_8\omega_6\omega_{19}\omega_{16}\omega_7v_3\omega_{23}c_s^2v_1 -$
$2\omega_{17}\omega_8\omega_{18}\omega_6\omega_{16}\omega_7v_2^2c_s^2\omega_{20} - \omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2 - 4\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{19}\omega_{16}\omega_7v_3\omega_{23}v_2^2v_1 - 2\omega_{11}\omega_{18}\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}v_1^2$

$C_{19} = -12\omega_{11}\omega_{16}^2\omega_7\omega_{23}v_2^2 + 6\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_2^2 + 18\omega_{11}\omega_{19}\omega_{16}^2\omega_7\omega_{23}v_2^2 - 12\omega_{11}\omega_{16}^2\omega_{10}\omega_7^2v_2^2 - 36\omega_{11}\omega_{16}^2\omega_{10}\omega_7^2c_s^2 +$
$54\omega_{11}\omega_{19}\omega_{16}^2\omega_7\omega_{23}c_s^2 - \omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} + 18\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2c_s^2 - 36\omega_{11}\omega_{16}^2\omega_7\omega_{23}c_s^2 - 12\omega_{11}\omega_{19}\omega_{10}\omega_7\omega_{23}v_2^2 - 12\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_{23} -$
$12\omega_{16}^2\omega_{10}\omega_7^2 - 36\omega_{11}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2 - 12\omega_{11}\omega_{16}^2\omega_7^2\omega_{23} + 5\omega_{11}\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} - 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_{23}v_2^2 - 36\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2 +$
$12\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7 - 12\omega_{11}\omega_{16}^2\omega_{10}\omega_7 - 12\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}v_2^2 + 12\omega_{11}\omega_{19}\omega_{10}\omega_7\omega_{23} - 36\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2 + 12\omega_{11}\omega_{16}^2\omega_{10}\omega_7^2 -$
$6\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2 - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_2^2 - 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2c_s^2 - 12\omega_{16}^2\omega_7^2\omega_{23}v_2^2 - 36\omega_{16}^2\omega_7^2\omega_{23}c_s^2 + 36\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2 -$
$18\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} + 18\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 + 54\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 + 12\omega_{16}^2\omega_7^2\omega_{23} + 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7v_2^2 - 6\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} -$
$36\omega_{11}\omega_{19}\omega_{16}^2\omega_{23}c_s^2 + 6\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2 + 3\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2 + \omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2 + 12\omega_{11}\omega_{19}\omega_{16}^2\omega_{23} - 12\omega_{11}\omega_{19}\omega_{16}^2\omega_{23}v_2^2 +$
$18\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2 + 3\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 18\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2 - 6\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_2^2 + 6\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}v_2^2 - 6\omega_{11}\omega_{19}\omega_{10}\omega_7^2\omega_{23} +$

$36\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_{23}c_s^2 + 36\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 12\omega_{16}^2\omega_{10}\omega_7^2v_2^2 + 12\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_{23}v_2^2 - 9\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 3\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 +$
$36\omega_{11}\omega_{16}^2\omega_7^2\omega_{23}c_s^2 - 15\omega_{11}\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2 - 5\omega_{11}\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}v_2^2 - 18\omega_{11}\omega_{19}\omega_{16}^2\omega_7\omega_{23} + 12\omega_{11}\omega_{16}^2\omega_7^2\omega_{23}v_2^2 + 12\omega_{11}\omega_{16}^2\omega_7\omega_{23} +$
$18\omega_{11}\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2 + 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_{23} + 6\omega_{11}\omega_{19}\omega_{10}\omega_7^2\omega_{23}v_2^2 + 12\omega_{11}\omega_{16}^2\omega_{10}\omega_7v_2^2 + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2 - 12\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7v_2^2 -$
$36\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7c_s^2 + 12\omega_{11}\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23} + 36\omega_{11}\omega_{16}^2\omega_{10}\omega_7c_s^2 - 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7$

$C_{20} = 12\omega_{11}\omega_{19}\omega_{16}\omega_7\omega_{23} - \omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 + 36\omega_{11}\omega_{19}\omega_{10}\omega_7\omega_{23}v_2^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} - 12\omega_{11}\omega_{19}\omega_{10}\omega_7^2 +$
$12\omega_{11}\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2 + 6\omega_{11}\omega_{19}\omega_{10}\omega_7^3 - 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2 - 12\omega_{16}\omega_7^3\omega_{23}c_s^2 - 12\omega_{11}\omega_{19}\omega_{10}\omega_7\omega_{23} - 36\omega_{16}\omega_7^3\omega_{23}v_2^2 +$
$54\omega_{11}\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2 - 36\omega_{11}\omega_{16}\omega_7^2\omega_{23}v_2^2 - 12\omega_{11}\omega_{16}\omega_7^2\omega_{23}c_s^2 + 18\omega_{11}\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 + 12\omega_{16}\omega_{10}\omega_7^3c_s^2 + 6\omega_{11}\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2 +$
$18\omega_{11}\omega_{19}\omega_{10}\omega_7^3\omega_{23}v_2^2 + 36\omega_{16}\omega_{10}\omega_7^3v_2^2 + 18\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 12\omega_{11}\omega_{16}\omega_{10}\omega_7^2 + 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2 + 12\omega_{11}\omega_{16}\omega_{10}\omega_7^2c_s^2 -$
$12\omega_{11}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2 + \omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 12\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_2^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2 - 36\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_2^2 -$
$36\omega_{11}\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2 + 36\omega_{11}\omega_{16}\omega_{10}\omega_7^2v_2^2 + 18\omega_{11}\omega_{19}\omega_{10}\omega_7^2\omega_{23} + 12\omega_{11}\omega_{19}\omega_{10}\omega_7^2c_s^2 + 36\omega_{11}\omega_{19}\omega_{10}\omega_7^2v_2^2 + 12\omega_{11}\omega_{16}\omega_{10}\omega_7^3 -$
$6\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^3 + 18\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2 - 5\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 3\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 + 5\omega_{11}\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 -$
$12\omega_{11}\omega_{16}\omega_7^3\omega_{23} + 18\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_2^2 - 36\omega_{11}\omega_{16}\omega_{10}\omega_7^3v_2^2 - 12\omega_{11}\omega_{16}\omega_{10}\omega_7^3c_s^2 + 6\omega_{11}\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2 - 18\omega_{11}\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2 -$
$54\omega_{11}\omega_{19}\omega_{10}\omega_7^2\omega_{23}v_2^2 + 36\omega_{11}\omega_{16}\omega_7^3\omega_{23}v_2^2 + 12\omega_{11}\omega_{16}\omega_7^2\omega_{23} - 15\omega_{11}\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2 - 18\omega_{11}\omega_{19}\omega_{16}\omega_7^2\omega_{23} - 5\omega_{11}\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 +$
$12\omega_{16}\omega_7^3\omega_{23} + 12\omega_{11}\omega_{16}\omega_7^3\omega_{23}c_s^2 - 18\omega_{11}\omega_{19}\omega_{10}\omega_7^3v_2^2 - 12\omega_{16}\omega_{10}\omega_7^3 - 6\omega_{11}\omega_{19}\omega_{10}\omega_7^3\omega_{23} - 6\omega_{11}\omega_{19}\omega_{10}\omega_7^3c_s^2$

$C_{21} = 12\omega_{11}^2\omega_6^2\omega_{22}\omega_{13} - 12\omega_{11}^2\omega_{18}^2\omega_{22}\omega_{13}v_3^2 - 18\omega_{11}^3\omega_{18}^2\omega_6^2c_s^2 - 12\omega_{11}^3\omega_{18}\omega_6\omega_{13} - 12\omega_{11}^3\omega_{18}\omega_6^2\omega_{13}v_3^2 - 12\omega_{11}^3\omega_{18}^2\omega_{22}\omega_{13} + 12\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}\omega_{13} +$
$18\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}c_s^2 + \omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}v_3^2 + 12\omega_{11}^2\omega_{18}^2\omega_6\omega_{22} - 36\omega_{11}^3\omega_{18}\omega_{22}\omega_{13}c_s^2 + 2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{13} - 36\omega_{11}^3\omega_{18}^2\omega_6\omega_{13}c_s^2 -$
$6\omega_{11}^3\omega_{18}\omega_6^2\omega_{22}\omega_{13}v_3^2 + 18\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}\omega_{13}v_3^2 + 12\omega_{11}^3\omega_6^2\omega_{22}\omega_{13}v_3^2 - 6\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{13} - 18\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{13}c_s^2 - 12\omega_{11}^3\omega_{18}^2\omega_6 + 12\omega_{11}^3\omega_{18}^2\omega_6\omega_{22}\omega_{13} -$
$12\omega_{11}^3\omega_{18}^2\omega_6\omega_{13}v_3^2 - 18\omega_{11}^3\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2 - 12\omega_{11}^3\omega_{18}\omega_{22}\omega_{13}v_3^2 + 6\omega_{11}^3\omega_{18}^2\omega_6^2 - 6\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{13}v_3^2 + 6\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{13} + 54\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}\omega_{13}c_s^2 +$
$36\omega_{11}^3\omega_6^2\omega_{22}\omega_{13}c_s^2 - 12\omega_{11}^3\omega_6^2\omega_{22}\omega_{13} - 36\omega_{11}^2\omega_{18}^2\omega_{22}\omega_{13}c_s^2 - 6\omega_{11}^3\omega_{18}^2\omega_6^2v_3^2 + 6\omega_{11}^3\omega_{18}\omega_6^2\omega_{22}\omega_{13} + 6\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}v_3^2 + 5\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}c_s^2 +$
$12\omega_{11}^2\omega_{18}^2\omega_{22}\omega_{13} - 36\omega_{11}^3\omega_{18}\omega_6^2\omega_{13}c_s^2 + 12\omega_{11}^3\omega_{18}^2\omega_6v_3^2 + 12\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13} - 36\omega_{11}^2\omega_6^2\omega_{22}\omega_{13}c_s^2 - 12\omega_{11}^3\omega_{18}^2\omega_6\omega_{22}\omega_{13}v_3^2 + 6\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{13}v_3^2 -$
$36\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2 + 18\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}\omega_{13}v_3^2 + 12\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}v_3^2 - 12\omega_{11}^2\omega_{18}\omega_6^2\omega_{13} - 36\omega_{11}\omega_8^2\omega_6^2\omega_{22}\omega_{13}c_s^2 + 36\omega_{11}^2\omega_{18}\omega_6^2\omega_{13}c_s^2 -$
$18\omega_{11}^3\omega_{18}\omega_6\omega_{22}\omega_{13} - 2\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}v_3^2 + 12\omega_{11}^3\omega_6\omega_{22}\omega_{13} - 12\omega_{11}^3\omega_6\omega_{22}\omega_{13}v_3^2 - 18\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}\omega_{13} - 12\omega_{18}^2\omega_6^2\omega_{22}\omega_{13} +$
$36\omega_{11}^3\omega_{18}\omega_6\omega_{13}c_s^2 + 18\omega_{11}^3\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2 - 12\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}v_3^2 + 36\omega_{11}^3\omega_{18}^2\omega_{22}\omega_{13}c_s^2 - 6\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}c_s^2 - 36\omega_{11}^3\omega_6\omega_{22}\omega_{13}c_s^2 -$
$6\omega_{11}^2\omega_{18}^2\omega_6^2\omega_{22} - 12\omega_{11}\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}v_3^2 + 12\omega_{11}^2\omega_{18}\omega_6^2\omega_{13}v_3^2 - 36\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}c_s^2 + 12\omega_{11}^3\omega_{18}^2\omega_{22}\omega_{13}v_3^2 + 12\omega_{11}^3\omega_{18}\omega_6\omega_{13}v_3^2 +$
$12\omega_{11}^3\omega_{18}\omega_{22}\omega_{13} + 12\omega_{11}^3\omega_{18}^2\omega_6\omega_{13} + 54\omega_{11}^3\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2 - 18\omega_{11}^2\omega_{18}^2\omega_6\omega_{22}\omega_{13} + 18\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{13}c_s^2 + 36\omega_{11}^3\omega_{18}^2\omega_6c_s^2 - 12\omega_{11}^2\omega_6^2\omega_{22}\omega_{13}v_3^2 -$
$40\omega_{11}^3\omega_{18}^2\omega_6\omega_{22}\omega_{13}c_s^2 - \omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22}\omega_{13} + 54\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2 + 36\omega_{18}^2\omega_6^2\omega_{22}\omega_{13}c_s^2 + 12\omega_{11}^3\omega_{18}\omega_6^2\omega_{13} - 12\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13}v_3^2$

$C_{22} = 6\omega_{11}\omega_{18}\omega_6^3\omega_{22}c_s^2 + 24\omega_{11}^2\omega_6^2\omega_{22}\omega_{13} - 12\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2 + 6\omega_{11}^2\omega_{18}\omega_6^3\omega_{13}c_s^2 + 12\omega_{11}^2\omega_6\omega_{22}\omega_{13}c_s^2 + 12\omega_{11}^2\omega_6^3\omega_{13} - 12\omega_{11}^2\omega_{18}\omega_6^2 +$
$12\omega_{11}^2\omega_6^2\omega_{13}c_s^2 - 6\omega_{11}\omega_{18}\omega_6^3\omega_{13}c_s^2 + 12\omega_{11}\omega_6^3\omega_{22}\omega_{13} + 12\omega_{18}\omega_6^2\omega_{22}\omega_{13} + 12\omega_{11}\omega_6^3\omega_{13}c_s^2 + 6\omega_{11}^2\omega_{18}\omega_6^3 + 6\omega_{11}\omega_{18}\omega_6^3\omega_{22}\omega_{13} - 12\omega_{11}^2\omega_6^2\omega_{13} -$
$18\omega_{11}\omega_{18}\omega_6^3\omega_{13}v_3^2 + 12\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{13} + 36\omega_{11}\omega_6^3\omega_{13}v_3^2 + 6\omega_{11}\omega_{18}\omega_6^3\omega_{13} - 36\omega_{11}\omega_{18}\omega_6\omega_{22}\omega_{13}v_3^2 + 18\omega_{11}\omega_{18}\omega_6^3\omega_{22}v_3^2 +$
$18\omega_{11}^2\omega_{18}\omega_6\omega_{22}\omega_{13}c_s^2 + 36\omega_{11}^2\omega_6\omega_{22}\omega_{13}v_3^2 + 36\omega_{11}^2\omega_6^2\omega_{13}v_3^2 + 18\omega_{11}^2\omega_{18}\omega_6^3\omega_{13}v_3^2 + 36\omega_{11}^2\omega_6^3\omega_{22}\omega_{13}v_3^2 - 24\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13} -$
$24\omega_{11}^2\omega_6^2\omega_{22}\omega_{13}c_s^2 + 12\omega_{11}\omega_{18}\omega_6^2\omega_{22} - 12\omega_{11}\omega_6^2\omega_{22}\omega_{13} - 18\omega_{11}\omega_{18}\omega_6^3\omega_{22}\omega_{13}v_3^2 + 24\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2 + 12\omega_{11}^2\omega_{18}\omega_6^2\omega_{13} -$
$18\omega_{11}^2\omega_{18}\omega_6^3v_3^2 - \omega_{11}^2\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2 - 6\omega_{18}\omega_6^3\omega_{22}\omega_{13} - 12\omega_{11}^2\omega_{18}\omega_6^2\omega_{13}c_s^2 - 12\omega_{11}^2\omega_6^3\omega_{13}c_s^2 - 36\omega_{18}\omega_6^2\omega_{22}\omega_{13}v_3^2 + 6\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2 +$
$12\omega_{11}^2\omega_{18}\omega_6^2c_s^2 - 36\omega_{11}\omega_6^3\omega_{22}\omega_{13}v_3^2 + 12\omega_{11}\omega_6^2\omega_{22}\omega_{13}c_s^2 - 12\omega_{11}\omega_{18}\omega_6^2\omega_{22}c_s^2 - 12\omega_{11}^2\omega_6^3\omega_{22}\omega_{13} - 36\omega_{11}^2\omega_6^3\omega_{13}v_3^2 - 6\omega_{11}^2\omega_{18}\omega_6^3\omega_{13} -$
$12\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2 + 18\omega_{18}\omega_6^3\omega_{22}\omega_{13}v_3^2 + 36\omega_{11}^2\omega_{18}\omega_6^2v_3^2 - 12\omega_{11}^2\omega_6\omega_{22}\omega_{13} - 6\omega_{11}\omega_{18}\omega_6^3\omega_{22} - 36\omega_{11}^2\omega_{18}\omega_6^2\omega_{13}v_3^2 - 12\omega_{11}\omega_6^3\omega_{13} -$
$12\omega_{11}\omega_6^3\omega_{22}\omega_{13}c_s^2 - 36\omega_{11}\omega_{18}\omega_6^2\omega_{22}v_3^2 + 36\omega_{11}\omega_6^2\omega_{22}\omega_{13}v_3^2 + 12\omega_{11}^2\omega_6^3\omega_{22}\omega_{13}c_s^2 - 72\omega_{11}^2\omega_6^2\omega_{22}\omega_{13}v_3^2 - 4\omega_{11}^2\omega_{18}\omega_6^2\omega_{22}\omega_{13}c_s^2 -$
$6\omega_{11}^2\omega_{18}\omega_6^3c_s^2 - 6\omega_{11}\omega_{18}\omega_6^3\omega_{22}\omega_{13}c_s^2 + 72\omega_{11}\omega_{18}\omega_6^2\omega_{22}\omega_{13}v_3^2 - 12\omega_{11}^2\omega_{18}\omega_{22}\omega_{13}c_s^2$

$C_{23} =$
$-6\omega_{11}^3\omega_{19}^2\omega_{16}\omega_7^2 - 36\omega_{11}^2\omega_{19}^2\omega_7\omega_{23}c_s^2 - 36\omega_{11}^3\omega_{19}\omega_{16}\omega_7^2c_s^2 - 6\omega_{11}^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 + 6\omega_{11}^3\omega_{19}\omega_{16}\omega_7^2\omega_{23} - 12\omega_{11}^3\omega_{16}\omega_7^2\omega_{23} + 6\omega_{11}^2\omega_{19}^2\omega_7^2v_3^2\omega_{23} -$
$12\omega_{11}^3\omega_{19}^2\omega_{16}\omega_7v_3^2 + 18\omega_{11}^2\omega_{19}^2\omega_{16}\omega_7v_3^2\omega_{23} - 6\omega_{11}^2\omega_{19}^2\omega_{16}\omega_7^2v_3^2 - 6\omega_{11}^3\omega_{19}^2\omega_7^2v_3^2 - 6\omega_{11}^2\omega_{19}^2\omega_7^2\omega_{23} + 36\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 + 54\omega_{11}^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 +$
$12\omega_{11}^2\omega_{19}^2\omega_{16}\omega_{23} - 12\omega_{11}^2\omega_{19}^2\omega_{16}\omega_7^2v_3^2\omega_{23} + 36\omega_{11}^3\omega_{19}^2\omega_{16}\omega_{23}c_s^2 - 18\omega_{11}^3\omega_{19}^2\omega_7^2c_s^2 + 54\omega_{11}^3\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2 - 18\omega_{11}^2\omega_{19}^2\omega_{16}\omega_7^2c_s^2 + 2\omega_{11}^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} -$
$6\omega_{11}^3\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23} - 12\omega_{11}^3\omega_{19}^2\omega_{16}\omega_{23} - 36\omega_{11}\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 - 12\omega_{11}^3\omega_{19}\omega_{16}\omega_7^2v_3^2 + \omega_{11}^3\omega_{19}^2\omega_{16}\omega_7^2v_3^2\omega_{23} + 12\omega_{11}^3\omega_{16}\omega_7^2v_3^2\omega_{23} -$
$36\omega_{11}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 + 6\omega_{11}^2\omega_{19}^2\omega_{16}\omega_7^2 - 36\omega_{11}\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 - 40\omega_{11}^3\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^2 + 12\omega_{11}^3\omega_{19}^2\omega_{16}\omega_7\omega_{23} + 12\omega_{11}^3\omega_{19}^2\omega_{16}\omega_7 -$
$36\omega_{11}^3\omega_{19}^2\omega_{16}\omega_7c_s^2 + 12\omega_{11}^2\omega_{16}\omega_7^2\omega_{23} - 36\omega_{11}^3\omega_{16}\omega_7\omega_{23}c_s^2 - 12\omega_{11}^3\omega_{19}\omega_{16}v_3^2\omega_{23} + 12\omega_{11}\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} - 12\omega_{11}\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23} +$
$12\omega_{11}^3\omega_{19}\omega_{16}\omega_7v_3^2 - 18\omega_{11}^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 + 18\omega_{11}^3\omega_{19}^2\omega_{16}\omega_7^2c_s^2 - \omega_{11}^3\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} + 12\omega_{11}^3\omega_{19}\omega_{16}\omega_{23} + 18\omega_{11}^3\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23} -$
$12\omega_{11}^3\omega_{19}^2\omega_7 - 12\omega_{11}^2\omega_{19}\omega_{16}\omega_7^2 - 12\omega_{11}^3\omega_{16}\omega_7v_3^2\omega_{23} - 36\omega_{11}^3\omega_{19}\omega_{16}\omega_{23}c_s^2 + 36\omega_{11}^3\omega_{19}^2\omega_7c_s^2 - 12\omega_{11}^3\omega_{19}^2\omega_{16}\omega_7v_3^2\omega_{23} - 18\omega_{11}^2\omega_{19}^2\omega_{16}\omega_7\omega_{23} +$
$36\omega_{11}^3\omega_{16}\omega_7^2\omega_{23}c_s^2 - 12\omega_{11}^2\omega_{16}\omega_7^2v_3^2\omega_{23} - 12\omega_{11}\omega_{19}^2\omega_{16}\omega_7^2v_3^2\omega_{23} + 12\omega_{11}^2\omega_{19}\omega_{16}\omega_7^2v_3^2 + 5\omega_{11}^3\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 - 12\omega_{11}^3\omega_{19}\omega_{16}\omega_7 +$
$18\omega_{11}^2\omega_{19}^2\omega_7^2\omega_{23}c_s^2 + 54\omega_{11}^2\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^2 + 12\omega_{11}^2\omega_{19}^2\omega_7\omega_{23} + 12\omega_{11}^3\omega_{19}\omega_{16}\omega_7^2 + 12\omega_{11}^3\omega_{19}^2\omega_7v_3^2 - 12\omega_{11}^2\omega_{19}^2\omega_7v_3^2\omega_{23} + 36\omega_{11}^2\omega_{19}\omega_{16}\omega_7^2c_s^2 -$
$2\omega_{11}^2\omega_{19}^2\omega_{16}\omega_7^2v_3^2\omega_{23} - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} - 18\omega_{11}^2\omega_{19}\omega_{16}\omega_7^2\omega_{23} + 12\omega_{19}^2\omega_{16}\omega_7^2v_3^2\omega_{23} + 18\omega_{11}^2\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23} - 36\omega_{11}^2\omega_{19}^2\omega_{16}\omega_{23}c_s^2 +$
$12\omega_{11}\omega_{19}\omega_{16}\omega_7^2\omega_{23} + 12\omega_{11}^3\omega_{19}^2\omega_{16}v_3^2\omega_{23} - 18\omega_{11}^3\omega_{19}\omega_{16}\omega_7\omega_{23} + 6\omega_{11}^3\omega_{19}^2\omega_7^2 + 36\omega_{11}^3\omega_{19}\omega_{16}\omega_7c_s^2 + 12\omega_{11}^3\omega_{16}\omega_7\omega_{23} + 6\omega_{11}^3\omega_{19}^2\omega_{16}\omega_7^2v_3^2$

$C_{24} = 18\omega_{11}\omega_{19}\omega_7^3v_3^2\omega_{23} + 12\omega_{11}\omega_{19}\omega_{16}\omega_7\omega_{23} + 36\omega_{11}^2\omega_{16}\omega_7^3v_3^2\omega_{23} - 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 + 36\omega_{11}^2\omega_{16}\omega_7^2v_3^2 + 6\omega_{11}\omega_{19}\omega_{16}\omega_7^3 - 12\omega_{11}\omega_{16}\omega_7^3 -$
$6\omega_{19}\omega_{16}\omega_7^3\omega_{23} - 12\omega_{11}^2\omega_{16}\omega_7^3c_s^2 - 6\omega_{11}\omega_{19}\omega_7^3\omega_{23} - 12\omega_{11}^2\omega_{16}\omega_7^3\omega_{23} - 18\omega_{11}\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23} - 36\omega_{11}\omega_{16}\omega_7^3v_3^2\omega_{23} - 4\omega_{11}^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 -$
$36\omega_{11}\omega_{19}\omega_{16}\omega_7v_3^2\omega_{23} - 36\omega_{11}^2\omega_{16}\omega_7^3v_3^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23} + 12\omega_{11}\omega_{16}\omega_7^2\omega_{23}c_s^2 + 24\omega_{11}\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 + 18\omega_{19}\omega_{16}\omega_7^3v_3^2\omega_{23} -$
$24\omega_{11}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 - 12\omega_{11}\omega_{19}\omega_7^2\omega_{23}c_s^2 + 12\omega_{11}^2\omega_{16}\omega_7^2c_s^2 + 24\omega_{11}^2\omega_{16}\omega_7^2\omega_{23} - 12\omega_{11}^2\omega_{19}\omega_{16}\omega_{23}c_s^2 + 12\omega_{11}\omega_{19}\omega_7^2\omega_{23} + 36\omega_{11}^2\omega_{16}\omega_7v_3^2\omega_{23} +$
$36\omega_{11}\omega_{16}\omega_7^2v_3^2\omega_{23} + 72\omega_{11}\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23} + 36\omega_{11}^2\omega_{19}\omega_7^2v_3^2 + 6\omega_{11}^2\omega_{19}\omega_{16}\omega_7^3c_s^2 - 6\omega_{11}^2\omega_{19}\omega_{16}\omega_7^3 - \omega_{11}^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 -$
$12\omega_{11}\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2 + 6\omega_{11}^2\omega_{19}\omega_7^3 - 12\omega_{11}^2\omega_{16}\omega_7\omega_{23} + 12\omega_{11}^2\omega_{19}\omega_{16}\omega_7^2 + 12\omega_{11}^2\omega_{16}\omega_7\omega_{23}c_s^2 - 72\omega_{11}^2\omega_{16}\omega_7^2v_3^2\omega_{23} - 36\omega_{11}\omega_{19}\omega_7^2v_3^2\omega_{23} -$
$12\omega_{11}^2\omega_{19}\omega_7^2 + 12\omega_{11}\omega_{16}\omega_7^3c_s^2 - 36\omega_{11}^2\omega_{19}\omega_{16}\omega_7^2v_3^2 - 6\omega_{11}^2\omega_{19}\omega_7^3c_s^2 - 6\omega_{11}\omega_{19}\omega_{16}\omega_7^3c_s^2 + 6\omega_{11}\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 +$
$12\omega_{11}\omega_{16}\omega_7^3\omega_{23} + 36\omega_{11}\omega_{16}\omega_7^3v_3^2 - 12\omega_{11}^2\omega_{19}\omega_{16}\omega_7^2c_s^2 - 18\omega_{11}^2\omega_{19}\omega_7^3v_3^2 - 18\omega_{11}\omega_{19}\omega_{16}\omega_7^3v_3^2 - 36\omega_{19}\omega_{16}\omega_7^2v_3^2\omega_{23} + 12\omega_{11}^2\omega_{16}\omega_7^3 +$
$6\omega_{11}\omega_{19}\omega_7^3\omega_{23}c_s^2 + 12\omega_{11}^2\omega_{16}\omega_7^3\omega_{23}c_s^2 + 12\omega_{11}^2\omega_{19}\omega_7^2c_s^2 + 18\omega_{11}^2\omega_{19}\omega_{16}\omega_7^3v_3^2 - 12\omega_{11}\omega_{16}\omega_7^2\omega_{23} - 24\omega_{11}\omega_{19}\omega_{16}\omega_7^2\omega_{23} -$
$6\omega_{11}\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 - 12\omega_{11}\omega_{16}\omega_7^3\omega_{23}c_s^2 - 12\omega_{11}^2\omega_{16}\omega_7^2 + 18\omega_{11}^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2$

$C_{25} =$
$-306\omega_{11}\omega_{18}^2\omega_6^3v_3^2c_s^2+36\omega_{11}\omega_{18}\omega_6^3v_3^2+36\omega_{11}^3\omega_{18}\omega_6v_3^2c_s^2-5\omega_{11}^3\omega_{18}^2\omega_6^2c_s^2-18\omega_{11}^3\omega_{18}\omega_6^2c_s^4-108\omega_{11}^2\omega_6^3v_3^2c_s^2-90\omega_{11}\omega_{18}^2\omega_6^3v_3^4+36\omega_{11}^2\omega_{18}\omega_6^2v_3^2c_s^2-$
$39\omega_{11}^3\omega_{18}\omega_6^3v_3^4+12\omega_{18}^2\omega_6^3c_s^4-6\omega_{11}^2\omega_{18}\omega_6^3c_s^4-12\omega_{11}^3\omega_{18}\omega_6c_s^2+36\omega_{11}^3\omega_6^3v_3^4-12\omega_{11}\omega_{18}^2\omega_6^2c_s^4+60\omega_{11}^2\omega_{18}^2\omega_6^3v_3^2c_s^2-24\omega_{11}^3\omega_{18}^2\omega_6c_s^4-\omega_{11}^2\omega_{18}^2\omega_6^3c_s^2-$
$4\omega_{11}^3\omega_{18}^2\omega_6^3v_3^2+36\omega_{11}^2\omega_6^3v_3^2+6\omega_{11}^3\omega_{18}\omega_6^3c_s^4+72\omega_{11}^2\omega_{18}\omega_6^3v_3^4+72\omega_{18}^2\omega_6^3v_3^4-19\omega_{11}^2\omega_{18}^2\omega_6^3v_3^2-3\omega_{11}^3\omega_{18}^2\omega_6^2v_3^2c_s^2-6\omega_{11}^2\omega_{18}^2\omega_6^2c_s^2+6\omega_{11}^3\omega_{18}^2\omega_6^2v_3^2-$
$12\omega_{11}\omega_{18}^2\omega_6^3c_s^4-99\omega_{11}^3\omega_{18}\omega_6^3v_3^2c_s^2+36\omega_{11}^3\omega_{18}\omega_6^2v_3^4-36\omega_{11}^3\omega_6^2v_3^4+108\omega_{11}^3\omega_6^2v_3^2c_s^2+12\omega_{11}^2\omega_{18}\omega_6^2c_s^4+19\omega_{11}^2\omega_{18}^2\omega_6^3v_3^4-\omega_{11}^3\omega_{18}^2\omega_6^3c_s^4+$
$18\omega_{11}^2\omega_{18}^2\omega_6^2v_3^2c_s^2-36\omega_{11}^2\omega_6^3v_3^4-18\omega_{11}^3\omega_{18}^2\omega_6v_3^2c_s^2-6\omega_{11}^3\omega_{18}\omega_6^3c_s^2-108\omega_{11}\omega_{18}\omega_6^3v_3^2c_s^2-72\omega_{18}^2\omega_6^3v_3^2-72\omega_{11}^2\omega_{18}\omega_6^3v_3^2+12\omega_{11}\omega_{18}^2\omega_6^3c_s^2+$
$198\omega_{11}^2\omega_{18}\omega_6^3v_3^2c_s^2+252\omega_{18}^2\omega_6^3v_3^2c_s^2-36\omega_{11}^3\omega_{18}\omega_6^2v_3^2+12\omega_{11}^3\omega_{18}^2c_s^4+36\omega_{11}^3\omega_6^2v_3^2-12\omega_{11}^2\omega_{18}\omega_6^2c_s^2+6\omega_{11}^2\omega_{18}^2\omega_6^2c_s^4-36\omega_{11}\omega_{18}^2\omega_6^2v_3^2c_s^2-$
$6\omega_{11}^3\omega_{18}^2\omega_6^2v_3^4+18\omega_{11}^3\omega_{18}\omega_6^2c_s^2+54\omega_{11}^3\omega_{18}\omega_6^2v_3^2c_s^2+90\omega_{11}\omega_{18}^2\omega_6^3v_3^2-108\omega_{11}^3\omega_6^2v_3^2c_s^2-36\omega_{11}\omega_{18}\omega_6^3v_3^4+13\omega_{11}^3\omega_{18}^2\omega_6^2c_s^4+\omega_{11}^2\omega_{18}^2\omega_6^3c_s^4+$
$6\omega_{11}^3\omega_{18}^2\omega_6c_s^2+12\omega_{11}^3\omega_{18}^2\omega_6^3v_3^2c_s^2+4\omega_{11}^3\omega_{18}^2\omega_6^3v_3^4+39\omega_{11}^3\omega_{18}\omega_6^3v_3^2+12\omega_{11}^3\omega_{18}\omega_6c_s^4+6\omega_{11}^2\omega_{18}\omega_6^3c_s^2-12\omega_{18}^2\omega_6^3c_s^2-36\omega_{11}^3\omega_6^3v_3^2+12\omega_{11}\omega_{18}^2\omega_6^2c_s^2$

$C_{26} = 72\omega_{11}^2\omega_{19}\omega_7^3v_3^4+72\omega_{19}^2\omega_7^3v_3^4-108\omega_{11}\omega_{19}\omega_7^3v_3^2c_s^2+6\omega_{11}^3\omega_{19}\omega_7^3c_s^4-18\omega_{11}^3\omega_{19}^2\omega_7v_3^2c_s^2+18\omega_{11}^2\omega_{19}^2\omega_7^2v_3^2c_s^2-19\omega_{11}^2\omega_{19}^2\omega_7^3v_3^2+6\omega_{11}^3\omega_{19}^2\omega_7^2v_3^2-$
$36\omega_{11}\omega_{19}^2\omega_7^2v_3^2c_s^2-6\omega_{11}^2\omega_{19}^2\omega_7^2c_s^2-36\omega_{11}^3\omega_7^3v_3^2+12\omega_{11}^2\omega_{19}\omega_7^2c_s^4+198\omega_{11}^2\omega_{19}\omega_7^3v_3^2c_s^2+252\omega_{19}^2\omega_7^3v_3^2c_s^2+36\omega_{11}^3\omega_{19}\omega_7^2v_3^4-12\omega_{11}\omega_{19}^2\omega_7^3c_s^4-$
$5\omega_{11}^3\omega_{19}^2\omega_7^2c_s^2-108\omega_{11}^3\omega_7^2v_3^2c_s^2+36\omega_{11}\omega_{19}\omega_7^3v_3^2-36\omega_{11}^2\omega_7^3v_3^4-90\omega_{11}\omega_{19}^2\omega_7^3v_3^4+54\omega_{11}^3\omega_{19}\omega_7^2v_3^2c_s^2-18\omega_{11}^3\omega_{19}\omega_7^2c_s^4-12\omega_{11}\omega_{19}^2\omega_7^2c_s^4+$
$12\omega_{11}^3\omega_{19}^2c_s^4+12\omega_{19}^2\omega_7^3c_s^4-6\omega_{11}^2\omega_{19}\omega_7^3c_s^4+36\omega_{11}^3\omega_7^2v_3^2-12\omega_{11}^3\omega_{19}\omega_7c_s^2-39\omega_{11}^3\omega_{19}\omega_7^3v_3^4-4\omega_{11}^3\omega_{19}^2\omega_7^3v_3^2-24\omega_{11}^3\omega_{19}^2\omega_7c_s^4+12\omega_{11}^3\omega_{19}^2\omega_7^3v_3^2c_s^2-$
$\omega_{11}^2\omega_{19}^2\omega_7^3c_s^2+36\omega_{11}^2\omega_{19}\omega_7^2v_3^2c_s^2+90\omega_{11}\omega_{19}^2\omega_7^3v_3^2+36\omega_{11}^2\omega_7^3v_3^2+18\omega_{11}^3\omega_{19}\omega_7^2c_s^2+13\omega_{11}^3\omega_{19}^2\omega_7c_s^4+36\omega_{11}^3\omega_{19}\omega_7v_3^2c_s^2-36\omega_{11}\omega_{19}\omega_7^3v_3^4-$
$108\omega_{11}^2\omega_7^3v_3^2c_s^2-306\omega_{11}\omega_{19}^2\omega_7^3v_3^2c_s^2+4\omega_{11}^3\omega_{19}^2\omega_7^3v_3^4+\omega_{11}^2\omega_{19}^2\omega_7^3c_s^4+6\omega_{11}^3\omega_{19}^2\omega_7c_s^2+60\omega_{11}^2\omega_{19}^2\omega_7^3v_3^2c_s^2+12\omega_{11}\omega_{19}^2\omega_7^2c_s^2+12\omega_{11}^3\omega_{19}\omega_7c_s^4-$
$36\omega_{11}^3\omega_7^2v_3^4+6\omega_{11}^2\omega_{19}\omega_7^3c_s^2-12\omega_{19}^2\omega_7^2c_s^2+39\omega_{11}^3\omega_{19}\omega_7^2v_3^2-3\omega_{11}^3\omega_{19}^2\omega_7^2v_3^2c_s^2-\omega_{11}^3\omega_{19}^2\omega_7^3c_s^4+19\omega_{11}^2\omega_{19}^2\omega_7^3v_3^4-72\omega_{19}^2\omega_7^3v_3^2-72\omega_{11}^2\omega_{19}\omega_7^3v_3^2-$
$6\omega_{11}^3\omega_{19}\omega_7^3c_s^2-12\omega_{11}^2\omega_{19}\omega_7^2c_s^2+36\omega_{11}^3\omega_7^3v_3^4-36\omega_{11}^3\omega_{19}\omega_7^2v_3^2+12\omega_{11}\omega_{19}^2\omega_7^3c_s^2-99\omega_{11}^3\omega_{19}\omega_7^3v_3^2c_s^2+108\omega_{11}^3\omega_7^3v_3^2c_s^2-6\omega_{11}^3\omega_{19}^2\omega_7^2v_3^4+6\omega_{11}^2\omega_{19}^2\omega_7^2c_s^4$

$C_{27} = 12-1008\omega_{11}v_3^2c_s^2-18\omega_{11}+82\omega_{11}^2c_s^4-132c_s^2-9\omega_{11}^3v_3^4+198\omega_{11}c_s^2-5\omega_{11}^3c_s^4+234\omega_{11}v_3^2-34\omega_{11}^3v_3^2c_s^2-156v_3^2+90\omega_{11}^2v_3^4+6\omega_{11}^3c_s^2-$
$216\omega_{11}v_3^4+672v_3^2c_s^2+144v_3^4-98\omega_{11}^2v_3^2-78\omega_{11}^2c_s^2+404\omega_{11}^2v_3^2c_s^2+8\omega_{11}^2+144c_s^4-\omega_{11}^3+10\omega_{11}^3v_3^2-216\omega_{11}c_s^4$

$C_{28} = 12-648\omega_{11}v_3^2c_s^2-18\omega_{11}+14\omega_{11}^2c_s^4-36c_s^2-29\omega_{11}^3v_3^4+54\omega_{11}c_s^2-\omega_{11}^3c_s^4+378\omega_{11}v_3^2-18\omega_{11}^3v_3^2c_s^2-252v_3^2+310\omega_{11}^2v_3^4+2\omega_{11}^3c_s^2-$
$756\omega_{11}v_3^4+432v_3^2c_s^2+504v_3^4-154\omega_{11}^2v_3^2-22\omega_{11}^2c_s^2+252\omega_{11}^2v_3^2c_s^2+8\omega_{11}^2+24c_s^4-\omega_{11}^3+14\omega_{11}^3v_3^2-36\omega_{11}c_s^4$

2.6 CuLBM1

2.6.1 Definitions

Based on [2], collision operator $\boldsymbol{C}$:

$$\boldsymbol{C}(\boldsymbol{f}) = \mathbf{M}^{-1}\boldsymbol{G}^{-1}\left(\mathbf{S}\left(\boldsymbol{\gamma}^{(eq)} - \boldsymbol{G}(\mathbf{M}\boldsymbol{f})\right)\right),$$

where

$$\mathbf{S} = \mathrm{diag}(0,0,0,0,\omega_1,\omega_2,\omega_3,\omega_4,\omega_5,\omega_6,\omega_7,\omega_8,\omega_9,\omega_{10},\omega_{11},\omega_{12},\omega_{13},\omega_{14},\omega_{15},\omega_{16},\omega_{17},\omega_{18},\omega_{19},\omega_{20},\omega_{21},\omega_{22},\omega_{23}),$$

$\omega_1,\omega_2,\cdots,\omega_{10} \in (0,2)$.
The nonlinear operator $\boldsymbol{G}$ (with its inverse $\boldsymbol{G}^{-1}$) transforms the raw moment vector $\boldsymbol{\mu}$ defined by matrix $\mathbf{M}$ to the cumulant vector

$$\boldsymbol{\gamma} = \boldsymbol{G}(\boldsymbol{\mu}) = \left(\gamma_{(0,0,0)},\gamma_{(1,0,0)},\gamma_{(0,1,0)},\cdots,\gamma_{(2,2,2)}\right)^T$$

as:

$\gamma_{(0,0,0)} = m_{(0,0,0)}$

$\gamma_{(1,0,0)} = m_{(1,0,0)} - v_1 m_{(0,0,0)}$

$\gamma_{(0,1,0)} = m_{(0,1,0)} - v_2 m_{(0,0,0)}$

$\gamma_{(0,0,1)} = m_{(0,0,1)} - v_3 m_{(0,0,0)}$

$\gamma_{(1,1,0)} = m_{(1,1,0)} - v_1 m_{(0,1,0)} - v_2 m_{(1,0,0)} - v_1 v_2 m_{(0,0,0)}$

$\gamma_{(1,0,1)} = m_{(1,0,1)} - v_1 m_{(0,0,1)} - v_3 m_{(1,0,0)} - v_1 v_3 m_{(0,0,0)}$

$\gamma_{(0,1,1)} = m_{(0,1,1)} - v_3 m_{(0,1,0)} - v_2 m_{(0,0,1)} - v_3 v_2 m_{(0,0,0)}$

$$\gamma_{(2,0,0)} = m_{(2,0,0)} - 2v_1 m_{(1,0,0)} + v_1 v_1 m_{(0,0,0)}$$

$$\gamma_{(0,2,0)} = m_{(0,2,0)} - 2v_2 m_{(0,1,0)} + v_2 v_2 m_{(0,0,0)}$$

$$\gamma_{(0,0,2)} = m_{(0,0,2)} - 2v_3 m_{(0,0,1)} + v_3 v_3 m_{(0,0,0)}$$

$$\gamma_{(1,2,0)} = m_{(1,2,0)} - 2v_2 m_{(1,1,0)} + v_2 v_2 m_{(1,0,0)} - v_1 m_{(0,2,0)} + 2v_1 v_2 m_{(0,1,0)} - v_1 v_2 v_2 m_{(0,0,0)}$$

$$\gamma_{(1,0,2)} = m_{(1,0,2)} - 2v_3 m_{(1,0,1)} + v_3 v_3 m_{(1,0,0)} - v_1 m_{(0,0,2)} + 2v_1 v_3 m_{(0,0,1)} - v_1 v_3 v_3 m_{(0,0,0)}$$

$$\gamma_{(0,1,2)} = m_{(0,1,2)} - 2v_3 m_{(0,1,1)} + v_3 v_3 m_{(0,1,0)} - v_2 m_{(0,0,2)} + 2v_2 v_3 m_{(0,0,1)} - v_2 v_3 v_3 m_{(0,0,0)}$$

$$\gamma_{(2,1,0)} = m_{(2,1,0)} - 2v_1 m_{(1,1,0)} + v_1 v_1 m_{(0,1,0)} - v_2 m_{(2,0,0)} + 2v_1 v_2 m_{(1,0,0)} - v_1 v_1 v_2 m_{(0,0,0)}$$

$$\gamma_{(2,0,1)} = m_{(2,0,1)} - 2v_1 m_{(1,0,1)} + v_1 v_1 m_{(0,0,1)} - v_3 m_{(2,0,0)} + 2v_1 v_3 m_{(1,0,0)} - v_1 v_1 v_3 m_{(0,0,0)}$$

$$\gamma_{(0,2,1)} = m_{(0,2,1)} - 2v_2 m_{(0,1,1)} + v_2 v_2 m_{(0,0,1)} - v_3 m_{(0,2,0)} + 2v_2 v_3 m_{(0,1,0)} - v_2 v_2 v_3 m_{(0,0,0)}$$

$$\gamma_{(1,1,1)} = m_{(1,1,1)} - v_3 m_{(1,1,0)} - v_2 m_{(1,0,1)} + v_2 v_3 m_{(1,0,0)} - v_1 m_{(0,1,1)} + v_1 v_3 m_{(0,1,0)} + v_1 v_2 m_{(0,0,1)} - v_1 v_2 v_3 m_{(0,0,0)}$$

$$\gamma_{(2,2,0)} = -2v_2 m_{(2,1,0)} - 2m_{(0,0,0)} v_1^2 v_2^2 - 4m_{(1,0,0)} v_1 v_2^2 - \frac{2{m_{(1,0,0)}}^2 v_2^2}{m_{(0,0,0)}} - 4m_{(0,1,0)} v_1^2 v_2 + 8m_{(1,1,0)} v_1 v_2 - \frac{8m_{(0,1,0)} m_{(1,0,0)} v_1 v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)} m_{(2,0,0)} v_2}{m_{(0,0,0)}} + \frac{4m_{(1,0,0)} m_{(1,1,0)} v_2}{m_{(0,0,0)}} - \frac{2{m_{(0,1,0)}}^2 v_1^2}{m_{(0,0,0)}} - 2m_{(1,2,0)} v_1 + \frac{4m_{(0,1,0)} m_{(1,1,0)} v_1}{m_{(0,0,0)}} + \frac{2m_{(0,2,0)} m_{(1,0,0)} v_1}{m_{(0,0,0)}} + m_{(2,2,0)} - \frac{m_{(0,2,0)} m_{(2,0,0)}}{m_{(0,0,0)}} - \frac{2{m_{(1,1,0)}}^2}{m_{(0,0,0)}}$$

$$\gamma_{(2,0,2)} = -2v_3 m_{(2,0,1)} - 2m_{(0,0,0)} v_1^2 v_3^2 - 4m_{(1,0,0)} v_1 v_3^2 - \frac{2{m_{(1,0,0)}}^2 v_3^2}{m_{(0,0,0)}} - 4m_{(0,0,1)} v_1^2 v_3 + 8m_{(1,0,1)} v_1 v_3 - \frac{8m_{(0,0,1)} m_{(1,0,0)} v_1 v_3}{m_{(0,0,0)}} + \frac{2m_{(0,0,1)} m_{(2,0,0)} v_3}{m_{(0,0,0)}} + \frac{4m_{(1,0,0)} m_{(1,0,1)} v_3}{m_{(0,0,0)}} - \frac{2{m_{(0,0,1)}}^2 v_1^2}{m_{(0,0,0)}} - 2m_{(1,0,2)} v_1 + \frac{4m_{(0,0,1)} m_{(1,0,1)} v_1}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)} m_{(1,0,0)} v_1}{m_{(0,0,0)}} + m_{(2,0,2)} - \frac{m_{(0,0,2)} m_{(2,0,0)}}{m_{(0,0,0)}} - \frac{2{m_{(1,0,1)}}^2}{m_{(0,0,0)}}$$

$$\gamma_{(0,2,2)} = -2v_3 m_{(0,2,1)} - 2m_{(0,0,0)} v_2^2 v_3^2 - 4m_{(0,1,0)} v_2 v_3^2 - \frac{2{m_{(0,1,0)}}^2 v_3^2}{m_{(0,0,0)}} - 4m_{(0,0,1)} v_2^2 v_3 + 8m_{(0,1,1)} v_2 v_3 - \frac{8m_{(0,0,1)} m_{(0,1,0)} v_2 v_3}{m_{(0,0,0)}} + \frac{2m_{(0,0,1)} m_{(0,2,0)} v_3}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)} m_{(0,1,1)} v_3}{m_{(0,0,0)}} - \frac{2{m_{(0,0,1)}}^2 v_2^2}{m_{(0,0,0)}} - 2m_{(0,1,2)} v_2 + \frac{4m_{(0,0,1)} m_{(0,1,1)} v_2}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)} m_{(0,1,0)} v_2}{m_{(0,0,0)}} + m_{(0,2,2)} - \frac{m_{(0,0,2)} m_{(0,2,0)}}{m_{(0,0,0)}} - \frac{2{m_{(0,1,1)}}^2}{m_{(0,0,0)}}$$

$$\gamma_{(2,1,1)} = -8m_{(1,0,0)} v_1 v_2 v_3 + 2m_{(2,0,0)} v_2 v_3 - \frac{2{m_{(1,0,0)}}^2 v_2 v_3}{m_{(0,0,0)}} - 2m_{(0,1,0)} v_1^2 v_3 + 4m_{(1,1,0)} v_1 v_3 - \frac{4m_{(0,1,0)} m_{(1,0,0)} v_1 v_3}{m_{(0,0,0)}} - m_{(2,1,0)} v_3 + \frac{m_{(0,1,0)} m_{(2,0,0)} v_3}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)} m_{(1,1,0)} v_3}{m_{(0,0,0)}} - 2m_{(0,0,1)} v_1^2 v_2 + 4m_{(1,0,1)} v_1 v_2 - \frac{4m_{(0,0,1)} m_{(1,0,0)} v_1 v_2}{m_{(0,0,0)}} - m_{(2,0,1)} v_2 + \frac{m_{(0,0,1)} m_{(2,0,0)} v_2}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)} m_{(1,0,1)} v_2}{m_{(0,0,0)}} - \frac{2m_{(0,0,1)} m_{(0,1,0)} v_1^2}{m_{(0,0,0)}} - 2m_{(1,1,1)} v_1 + \frac{2m_{(0,0,1)} m_{(1,1,0)} v_1}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)} m_{(1,0,1)} v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,1)} m_{(1,0,0)} v_1}{m_{(0,0,0)}} + m_{(2,1,1)} - \frac{m_{(0,1,1)} m_{(2,0,0)}}{m_{(0,0,0)}} - \frac{2m_{(1,0,1)} m_{(1,1,0)}}{m_{(0,0,0)}}$$

$$\gamma_{(1,2,1)} = -2m_{(1,0,0)} v_2^2 v_3 - 8m_{(0,1,0)} v_1 v_2 v_3 + 4m_{(1,1,0)} v_2 v_3 - \frac{4m_{(0,1,0)} m_{(1,0,0)} v_2 v_3}{m_{(0,0,0)}} + 2m_{(0,2,0)} v_1 v_3 - \frac{2{m_{(1,0,0)}}^2 v_1 v_3}{m_{(0,0,0)}} - m_{(1,2,0)} v_3 + \frac{2m_{(1,0,0)} m_{(1,1,0)} v_3}{m_{(0,0,0)}} + \frac{m_{(0,2,0)} m_{(1,0,0)} v_3}{m_{(0,0,0)}} - 2m_{(0,0,1)} v_1 v_2^2 - \frac{2m_{(0,0,1)} m_{(1,0,0)} v_2^2}{m_{(0,0,0)}} + 4m_{(0,1,1)} v_1 v_2 - \frac{4m_{(0,0,1)} m_{(0,1,0)} v_1 v_2}{m_{(0,0,0)}} - 2m_{(1,1,1)} v_2 + \frac{2m_{(0,0,1)} m_{(1,1,0)} v_2}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)} m_{(1,0,1)} v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,1)} m_{(1,0,0)} v_2}{m_{(0,0,0)}} - m_{(0,2,1)} v_1 + \frac{m_{(0,0,1)} m_{(0,2,0)} v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)} m_{(0,1,1)} v_1}{m_{(0,0,0)}} + m_{(1,2,1)} - \frac{2m_{(0,1,1)} m_{(1,1,0)}}{m_{(0,0,0)}} - \frac{m_{(0,2,0)} m_{(1,0,1)}}{m_{(0,0,0)}}$$

$$\gamma_{(1,1,2)} = -2m_{(1,0,0)}v_2v_3^2 - 2m_{(0,1,0)}v_1v_3^2 - \frac{2m_{(0,1,0)}m_{(1,0,0)}v_3^2}{m_{(0,0,0)}} - 8m_{(0,0,1)}v_1v_2v_3 + 4m_{(1,0,1)}v_2v_3 - \frac{4m_{(0,0,1)}m_{(1,0,0)}v_2v_3}{m_{(0,0,0)}} + 4m_{(0,1,1)}v_1v_3 - \frac{4m_{(0,0,1)}m_{(0,1,0)}v_1v_3}{m_{(0,0,0)}} - 2m_{(1,1,1)}v_3 + \frac{2m_{(0,0,1)}m_{(1,1,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(1,0,1)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,1,1)}m_{(1,0,0)}v_3}{m_{(0,0,0)}} + 2m_{(0,0,2)}v_1v_2 - \frac{2{m_{(0,0,1)}}^2v_1v_2}{m_{(0,0,0)}} - m_{(1,0,2)}v_2 + \frac{2m_{(0,0,1)}m_{(1,0,1)}v_2}{m_{(0,0,0)}} + \frac{m_{(0,0,2)}m_{(1,0,0)}v_2}{m_{(0,0,0)}} - m_{(0,1,2)}v_1 + \frac{2m_{(0,0,1)}m_{(0,1,1)}v_1}{m_{(0,0,0)}} + \frac{m_{(0,0,2)}m_{(1,0,0)}v_1}{m_{(0,0,0)}} + m_{(1,1,2)} - \frac{m_{(0,0,2)}m_{(1,1,0)}}{m_{(0,0,0)}} - \frac{2m_{(0,1,1)}m_{(1,0,1)}}{m_{(0,0,0)}}$$

$$\gamma_{(1,2,2)} = -m_{(0,0,0)}v_1^2v_2^2v_3^2 - 6m_{(0,0,0)}v_1v_2^2v_3^2 - m_{(1,0,0)}v_2^2v_3^2 + 2m_{(0,1,0)}v_1v_2v_3^2 - 2m_{(1,1,0)}v_2v_3^2 + \frac{12m_{(0,1,0)}m_{(1,0,0)}v_2v_3^2}{m_{(0,0,0)}} - m_{(0,2,0)}v_1v_3^2 + \frac{6{m_{(0,1,0)}}^2v_1v_3^2}{m_{(0,0,0)}} - \frac{6m_{(0,1,0)}m_{(1,1,0)}v_3^2}{m_{(0,0,0)}} - \frac{3m_{(0,2,0)}m_{(1,0,0)}v_3^2}{m_{(0,0,0)}} + 2m_{(0,0,1)}v_1v_2^2v_3 - 2m_{(1,0,1)}v_2^2v_3 + \frac{12m_{(0,0,1)}m_{(1,0,0)}v_2^2v_3}{m_{(0,0,0)}} - 12m_{(0,1,1)}v_1v_2v_3 + \frac{24m_{(0,0,1)}m_{(1,0,0)}v_1v_2v_3}{m_{(0,0,0)}} + 8m_{(1,1,1)}v_2v_3 - \frac{12m_{(0,0,1)}m_{(1,1,0)}v_2v_3}{m_{(0,0,0)}} - \frac{12m_{(0,1,0)}m_{(1,0,1)}v_2v_3}{m_{(0,0,0)}} - \frac{12m_{(0,1,1)}m_{(1,0,0)}v_2v_3}{m_{(0,0,0)}} + 4m_{(0,2,1)}v_1v_3 - \frac{6m_{(0,0,1)}m_{(0,2,0)}v_1v_3}{m_{(0,0,0)}} - \frac{12m_{(0,1,0)}m_{(0,1,1)}v_1v_3}{m_{(0,0,0)}} - 2m_{(1,2,1)}v_3 + \frac{2m_{(0,0,1)}m_{(1,2,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)}m_{(1,1,1)}v_3}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(1,1,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(0,2,0)}m_{(1,0,1)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,2,1)}m_{(1,0,0)}v_3}{m_{(0,0,0)}} - m_{(0,0,2)}v_1v_2^2 + \frac{6{m_{(0,0,1)}}^2v_1v_2^2}{m_{(0,0,0)}} - \frac{6m_{(0,0,1)}m_{(1,0,1)}v_2^2}{m_{(0,0,0)}} - \frac{3m_{(0,0,2)}m_{(1,0,0)}v_2^2}{m_{(0,0,0)}} + 4m_{(0,1,2)}v_1v_2 - \frac{12m_{(0,0,1)}m_{(0,1,1)}v_1v_2}{m_{(0,0,0)}} - \frac{6m_{(0,0,2)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}} - 2m_{(1,1,2)}v_2 + \frac{4m_{(0,0,1)}m_{(1,1,1)}v_2}{m_{(0,0,0)}} + \frac{4m_{(0,0,2)}m_{(1,1,0)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(1,0,2)}v_2}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(1,0,1)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,2)}m_{(1,0,0)}v_2}{m_{(0,0,0)}} - m_{(0,2,2)}v_1 + \frac{2m_{(0,0,1)}m_{(0,2,1)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)}m_{(0,2,0)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(0,1,2)}v_1}{m_{(0,0,0)}} + \frac{4{m_{(0,1,1)}}^2v_1}{m_{(0,0,0)}} + m_{(1,2,2)} - \frac{m_{(0,0,2)}m_{(1,2,0)}}{m_{(0,0,0)}} - \frac{4m_{(0,1,1)}m_{(1,1,1)}}{m_{(0,0,0)}} - \frac{2m_{(0,1,2)}m_{(1,1,0)}}{m_{(0,0,0)}} - \frac{m_{(0,2,0)}m_{(1,0,2)}}{m_{(0,0,0)}} - \frac{2m_{(0,2,1)}m_{(1,0,1)}}{m_{(0,0,0)}}$$

$$\gamma_{(2,1,2)} = -m_{(0,0,0)}v_1^2v_2^2v_3^2 - 6m_{(0,0,0)}v_1^2v_2v_3^2 + 2m_{(1,0,0)}v_1v_2v_3^2 - m_{(2,0,0)}v_2v_3^2 + \frac{6{m_{(1,0,0)}}^2v_2v_3^2}{m_{(0,0,0)}} - m_{(0,1,0)}v_1^2v_3^2 - 2m_{(1,1,0)}v_1v_3^2 + \frac{12m_{(0,1,0)}m_{(1,0,0)}v_1v_3^2}{m_{(0,0,0)}} - \frac{3m_{(0,1,0)}m_{(2,0,0)}v_3^2}{m_{(0,0,0)}} - \frac{6m_{(1,0,0)}m_{(1,1,0)}v_3^2}{m_{(0,0,0)}} + 2m_{(0,0,1)}v_1^2v_2v_3 - 12m_{(1,0,1)}v_1v_2v_3 + \frac{24m_{(0,0,1)}m_{(1,0,0)}v_1v_2v_3}{m_{(0,0,0)}} + 4m_{(2,0,1)}v_2v_3 - \frac{6m_{(0,0,1)}m_{(2,0,0)}v_2v_3}{m_{(0,0,0)}} - \frac{12m_{(1,0,0)}m_{(1,0,1)}v_2v_3}{m_{(0,0,0)}} - 2m_{(0,1,1)}v_1^2v_3 + \frac{12m_{(0,0,1)}m_{(1,0,0)}v_1^2v_3}{m_{(0,0,0)}} + 8m_{(1,1,1)}v_1v_3 - \frac{12m_{(0,0,1)}m_{(1,1,0)}v_1v_3}{m_{(0,0,0)}} - \frac{12m_{(0,1,0)}m_{(1,0,1)}v_1v_3}{m_{(0,0,0)}} - \frac{12m_{(0,1,1)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}} - 2m_{(2,1,1)}v_3 + \frac{2m_{(0,0,1)}m_{(2,1,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(2,0,1)}v_3}{m_{(0,0,0)}} + \frac{4m_{(0,1,1)}m_{(2,0,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(1,0,0)}m_{(1,1,1)}v_3}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(1,1,0)}v_3}{m_{(0,0,0)}} - m_{(0,0,2)}v_1^2v_2 + \frac{6{m_{(0,0,1)}}^2v_1^2v_2}{m_{(0,0,0)}} + 4m_{(1,0,2)}v_1v_2 - \frac{12m_{(0,0,1)}m_{(1,0,1)}v_1v_2}{m_{(0,0,0)}} - \frac{6m_{(0,0,2)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}} - m_{(2,0,2)}v_2 + \frac{2m_{(0,0,1)}m_{(2,0,1)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)}m_{(2,0,0)}v_2}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)}m_{(1,0,2)}v_2}{m_{(0,0,0)}} + \frac{4{m_{(0,1,1)}}^2v_2}{m_{(0,0,0)}} - \frac{6m_{(0,0,1)}m_{(0,1,1)}v_1^2}{m_{(0,0,0)}} - \frac{3m_{(0,0,2)}m_{(0,1,0)}v_1^2}{m_{(0,0,0)}} - 2m_{(1,1,2)}v_1 + \frac{4m_{(0,0,1)}m_{(1,1,1)}v_1}{m_{(0,0,0)}} + \frac{4m_{(0,0,2)}m_{(1,1,0)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(1,0,2)}v_1}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(1,0,1)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,2)}m_{(1,0,0)}v_1}{m_{(0,0,0)}} + m_{(2,1,2)} - \frac{m_{(0,0,2)}m_{(2,1,0)}}{m_{(0,0,0)}} - \frac{2m_{(0,1,1)}m_{(2,0,1)}}{m_{(0,0,0)}} - \frac{m_{(0,1,2)}m_{(2,0,0)}}{m_{(0,0,0)}} - \frac{4m_{(1,0,1)}m_{(1,1,1)}}{m_{(0,0,0)}} - \frac{2m_{(1,0,2)}m_{(1,1,0)}}{m_{(0,0,0)}}$$

$$\gamma_{(2,2,1)} = -m_{(0,0,0)}v_1^2v_2^2v_3^2 - 6m_{(0,0,0)}v_1^2v_2^2v_3 + 2m_{(1,0,0)}v_1v_2^2v_3 - m_{(2,0,0)}v_2^2v_3 + \frac{6{m_{(1,0,0)}}^2v_2^2v_3}{m_{(0,0,0)}} + 2m_{(0,1,0)}v_1^2v_2v_3 - 12m_{(1,1,0)}v_1v_2v_3 + \frac{24m_{(0,1,0)}m_{(1,0,0)}v_1v_2v_3}{m_{(0,0,0)}} + 4m_{(2,1,0)}v_2v_3 - \frac{6m_{(0,1,0)}m_{(2,0,0)}v_2v_3}{m_{(0,0,0)}} - \frac{12m_{(1,0,0)}m_{(1,1,0)}v_2v_3}{m_{(0,0,0)}} - m_{(0,2,0)}v_1^2v_3 + \frac{6{m_{(0,1,0)}}^2v_1^2v_3}{m_{(0,0,0)}} + 4m_{(1,2,0)}v_1v_3 - \frac{12m_{(0,1,0)}m_{(1,1,0)}v_1v_3}{m_{(0,0,0)}} - \frac{6m_{(0,2,0)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}} - m_{(2,2,0)}v_3 + \frac{2m_{(0,1,0)}m_{(2,1,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,2,0)}m_{(2,0,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)}m_{(1,2,0)}v_3}{m_{(0,0,0)}} + \frac{4{m_{(1,1,0)}}^2v_3}{m_{(0,0,0)}} - m_{(0,0,1)}v_1^2v_2^2 - 2m_{(1,0,1)}v_1v_2^2 + \frac{12m_{(0,0,1)}m_{(1,0,0)}v_1v_2^2}{m_{(0,0,0)}} - \frac{3m_{(0,0,1)}m_{(2,0,0)}v_2^2}{m_{(0,0,0)}} - \frac{6m_{(1,0,0)}m_{(1,0,1)}v_2^2}{m_{(0,0,0)}} - 2m_{(0,1,1)}v_1^2v_2 + \frac{12m_{(0,0,1)}m_{(1,0,0)}v_1^2v_2}{m_{(0,0,0)}} + 8m_{(1,1,1)}v_1v_2 - \frac{12m_{(0,0,1)}m_{(1,1,0)}v_1v_2}{m_{(0,0,0)}} - \frac{12m_{(0,1,0)}m_{(1,0,1)}v_1v_2}{m_{(0,0,0)}} - \frac{12m_{(0,1,1)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}} - 2m_{(2,1,1)}v_2 + \frac{2m_{(0,0,1)}m_{(2,1,0)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(2,0,1)}v_2}{m_{(0,0,0)}} + \frac{4m_{(0,1,1)}m_{(2,0,0)}v_2}{m_{(0,0,0)}} + \frac{4m_{(1,0,0)}m_{(1,1,1)}v_2}{m_{(0,0,0)}} + \frac{8m_{(1,0,1)}m_{(1,1,0)}v_2}{m_{(0,0,0)}} - \frac{3m_{(0,0,1)}m_{(0,2,0)}v_1^2}{m_{(0,0,0)}} - \frac{6m_{(1,0,0)}m_{(0,1,1)}v_1^2}{m_{(0,0,0)}} - 2m_{(1,2,1)}v_1 + \frac{2m_{(0,0,1)}m_{(1,2,0)}v_1}{m_{(0,0,0)}} + \frac{4m_{(1,0,0)}m_{(1,1,1)}v_1}{m_{(0,0,0)}} +$$

$$\frac{8m_{(0,1,1)}m_{(1,1,0)}v_1}{m_{(0,0,0)}}+\frac{4m_{(0,2,0)}m_{(1,0,1)}v_1}{m_{(0,0,0)}}+\frac{2m_{(0,2,1)}m_{(1,0,0)}v_1}{m_{(0,0,0)}}+m_{(2,2,1)}-\frac{2m_{(0,1,1)}m_{(2,1,0)}}{m_{(0,0,0)}}-\frac{m_{(0,2,0)}m_{(2,0,1)}}{m_{(0,0,0)}}-\frac{m_{(0,2,1)}m_{(2,0,0)}}{m_{(0,0,0)}}-\frac{2m_{(1,0,1)}m_{(1,2,0)}}{m_{(0,0,0)}}-\frac{4m_{(1,1,0)}m_{(1,1,1)}}{m_{(0,0,0)}}$$

$$\gamma_{(2,2,2)} = 2v_2^2v_3m_{(2,0,1)} - \frac{4m_{(0,1,0)}v_2v_3m_{(2,0,1)}}{m_{(0,0,0)}} + \frac{2m_{(0,2,0)}v_3m_{(2,0,1)}}{m_{(0,0,0)}} + 2v_1^2v_3m_{(0,2,1)} - \frac{4m_{(1,0,0)}v_1v_3m_{(0,2,1)}}{m_{(0,0,0)}} + \frac{2m_{(2,0,0)}v_3m_{(0,2,1)}}{m_{(0,0,0)}} - 4m_{(0,0,0)}v_1v_2v_3^4 - 4m_{(1,0,0)}v_2v_3^4 - 4m_{(0,1,0)}v_1v_3^4 + 4m_{(1,1,0)}v_3^4 + 16m_{(0,0,1)}v_1v_2v_3^3 + \frac{16m_{(0,0,1)}m_{(1,0,0)}v_2v_3^3}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(0,1,0)}v_1v_3^3}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}m_{(1,1,0)}v_3^3}{m_{(0,0,0)}} + 2v_2m_{(2,1,0)}v_3^2 - 7m_{(0,0,0)}v_1^2v_2^2v_3^2 + v_1^2v_2^2v_3^2 - 20m_{(1,0,0)}v_1v_2^2v_3^2 + 4m_{(2,0,0)}v_2^2v_3^2 - \frac{26m_{(1,0,0)}{}^2v_2^2v_3^2}{m_{(0,0,0)}} - 20m_{(0,1,0)}v_1^2v_2v_3^2 + 16m_{(1,1,0)}v_1v_2v_3^2 - \frac{128m_{(0,1,0)}m_{(1,0,0)}v_1v_2v_3^2}{m_{(0,0,0)}} - 8m_{(0,0,2)}v_1v_2v_3^2 - \frac{16m_{(0,0,1)}{}^2v_1v_2v_3^2}{m_{(0,0,0)}} - 4m_{(2,1,0)}v_2v_3^2 + \frac{18m_{(0,1,0)}m_{(2,0,0)}v_2v_3^2}{m_{(0,0,0)}} + \frac{44m_{(1,0,0)}m_{(1,1,0)}v_2v_3^2}{m_{(0,0,0)}} - \frac{24m_{(0,1,0)}m_{(1,0,0)}{}^2v_2v_3^2}{m_{(0,0,0)}{}^2} - \frac{8m_{(0,0,2)}m_{(1,0,0)}v_2v_3^2}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}{}^2m_{(1,0,0)}v_2v_3^2}{m_{(0,0,0)}{}^2} + 4m_{(0,2,0)}v_1^2v_3^2 - \frac{26m_{(0,1,0)}{}^2v_1^2v_3^2}{m_{(0,0,0)}} - 2m_{(1,2,0)}v_1v_3^2 + \frac{44m_{(0,1,0)}m_{(1,1,0)}v_1v_3^2}{m_{(0,0,0)}} + \frac{18m_{(0,2,0)}m_{(1,0,0)}v_1v_3^2}{m_{(0,0,0)}} - \frac{24m_{(0,1,0)}{}^2m_{(1,0,0)}v_1v_3^2}{m_{(0,0,0)}{}^2} - \frac{8m_{(0,0,2)}m_{(0,1,0)}v_1v_3^2}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}{}^2m_{(0,1,0)}v_1v_3^2}{m_{(0,0,0)}{}^2} - \frac{6m_{(0,1,0)}m_{(2,1,0)}v_3^2}{m_{(0,0,0)}} - \frac{2m_{(0,2,0)}m_{(2,0,0)}v_3^2}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)}{}^2m_{(2,0,0)}v_3^2}{m_{(0,0,0)}{}^2} - \frac{6m_{(1,0,0)}m_{(1,2,0)}v_3^2}{m_{(0,0,0)}} - \frac{8m_{(1,1,0)}{}^2v_3^2}{m_{(0,0,0)}} + \frac{16m_{(0,1,0)}m_{(1,0,0)}m_{(1,1,0)}v_3^2}{m_{(0,0,0)}{}^2} + \frac{8m_{(0,0,2)}m_{(1,1,0)}v_3^2}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}{}^2m_{(1,1,0)}v_3^2}{m_{(0,0,0)}{}^2} + \frac{4m_{(0,2,0)}m_{(1,0,0)}{}^2v_3^2}{m_{(0,0,0)}{}^2} - \frac{4m_{(0,0,1)}v_2m_{(2,1,0)}v_3}{m_{(0,0,0)}} - 4m_{(0,0,1)}v_1^2v_2^2v_3 + 8m_{(1,0,1)}v_1v_2^2v_3 - \frac{104m_{(0,0,1)}m_{(1,0,0)}v_1v_2^2v_3}{m_{(0,0,0)}} - 4m_{(2,0,1)}v_2^2v_3 + \frac{18m_{(0,0,1)}m_{(2,0,0)}v_2^2v_3}{m_{(0,0,0)}} + \frac{36m_{(1,0,0)}m_{(1,0,1)}v_2^2v_3}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}m_{(1,0,0)}{}^2v_2^2v_3}{m_{(0,0,0)}{}^2} + 8m_{(0,1,1)}v_1^2v_2v_3 - \frac{104m_{(0,0,1)}m_{(1,0,0)}v_1^2v_2v_3}{m_{(0,0,0)}} - 24m_{(1,1,1)}v_1v_2v_3 + \frac{88m_{(0,0,1)}m_{(1,1,0)}v_1v_2v_3}{m_{(0,0,0)}} + \frac{104m_{(0,1,0)}m_{(1,0,1)}v_1v_2v_3}{m_{(0,0,0)}} + \frac{104m_{(0,1,1)}m_{(1,0,0)}v_1v_2v_3}{m_{(0,0,0)}} - \frac{80m_{(0,0,1)}m_{(0,1,0)}m_{(1,0,0)}v_1v_2v_3}{m_{(0,0,0)}{}^2} + \frac{16m_{(0,0,1)}m_{(0,0,2)}v_1v_2v_3}{m_{(0,0,0)}} + 8m_{(2,1,1)}v_2v_3 - \frac{8m_{(0,0,1)}m_{(2,1,0)}v_2v_3}{m_{(0,0,0)}} - \frac{8m_{(0,1,0)}m_{(2,0,1)}v_2v_3}{m_{(0,0,0)}} - \frac{24m_{(0,1,1)}m_{(2,0,0)}v_2v_3}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(0,1,0)}m_{(2,0,0)}v_2v_3}{m_{(0,0,0)}{}^2} - \frac{24m_{(1,0,0)}m_{(1,1,1)}v_2v_3}{m_{(0,0,0)}} - \frac{48m_{(0,1,0)}m_{(1,1,0)}v_2v_3}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(1,0,0)}m_{(1,1,0)}v_2v_3}{m_{(0,0,0)}{}^2} + \frac{32m_{(0,1,0)}m_{(1,0,0)}m_{(1,0,1)}v_2v_3}{m_{(0,0,0)}{}^2} + \frac{16m_{(0,1,1)}m_{(1,0,0)}{}^2v_2v_3}{m_{(0,0,0)}{}^2} + \frac{16m_{(0,0,1)}m_{(0,0,2)}m_{(1,0,0)}v_2v_3}{m_{(0,0,0)}{}^2} - 4m_{(0,2,1)}v_1^2v_3 + \frac{18m_{(0,0,1)}m_{(0,2,0)}v_1^2v_3}{m_{(0,0,0)}} + \frac{36m_{(0,1,0)}m_{(0,1,1)}v_1^2v_3}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}m_{(0,1,0)}{}^2v_1^2v_3}{m_{(0,0,0)}{}^2} + 8m_{(1,2,1)}v_1v_3 - \frac{12m_{(0,0,1)}m_{(1,2,0)}v_1v_3}{m_{(0,0,0)}} - \frac{24m_{(0,1,0)}m_{(1,1,1)}v_1v_3}{m_{(0,0,0)}} - \frac{48m_{(0,1,1)}m_{(1,1,0)}v_1v_3}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(0,1,0)}m_{(1,1,0)}v_1v_3}{m_{(0,0,0)}{}^2} - \frac{24m_{(0,2,0)}m_{(1,0,1)}v_1v_3}{m_{(0,0,0)}} + \frac{16m_{(0,1,0)}{}^2m_{(0,1,1)}v_1v_3}{m_{(0,0,0)}{}^2} - \frac{8m_{(0,2,1)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(0,2,0)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}{}^2} + \frac{32m_{(0,1,0)}m_{(0,1,1)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}{}^2} + \frac{16m_{(0,0,1)}m_{(0,0,2)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}{}^2} - 2m_{(2,2,1)}v_3 + \frac{2m_{(0,0,1)}m_{(2,2,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)}m_{(2,1,1)}v_3}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(2,1,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,2,0)}m_{(2,0,1)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,2,1)}m_{(2,0,0)}v_3}{m_{(0,0,0)}} - \frac{4m_{(0,0,1)}m_{(0,2,0)}m_{(2,0,0)}v_3}{m_{(0,0,0)}{}^2} - \frac{8m_{(0,1,0)}m_{(0,1,1)}m_{(2,0,0)}v_3}{m_{(0,0,0)}{}^2} + \frac{4m_{(1,0,0)}m_{(1,2,1)}v_3}{m_{(0,0,0)}} + \frac{8m_{(1,0,1)}m_{(1,2,0)}v_3}{m_{(0,0,0)}} + \frac{16m_{(1,1,0)}m_{(1,1,1)}v_3}{m_{(0,0,0)}} - \frac{16m_{(0,1,0)}m_{(1,0,1)}m_{(1,1,0)}v_3}{m_{(0,0,0)}{}^2} - \frac{16m_{(0,1,1)}m_{(1,0,0)}m_{(1,1,0)}v_3}{m_{(0,0,0)}{}^2} - \frac{16m_{(0,0,1)}m_{(0,0,2)}m_{(1,1,0)}v_3}{m_{(0,0,0)}{}^2} - \frac{8m_{(0,2,0)}m_{(1,0,0)}m_{(1,0,1)}v_3}{m_{(0,0,0)}{}^2} + \frac{2m_{(0,0,2)}v_2m_{(2,1,0)}}{m_{(0,0,0)}} - \frac{22m_{(0,0,1)}{}^2v_1^2v_2^2}{m_{(0,0,0)}} - 2m_{(1,0,2)}v_1v_2^2 + \frac{36m_{(0,0,1)}m_{(1,0,1)}v_1v_2^2}{m_{(0,0,0)}} + \frac{10m_{(0,0,2)}m_{(1,0,0)}v_1v_2^2}{m_{(0,0,0)}} - \frac{24m_{(0,0,1)}{}^2m_{(1,0,0)}v_1v_2^2}{m_{(0,0,0)}{}^2} - \frac{6m_{(0,0,1)}m_{(2,0,1)}v_2^2}{m_{(0,0,0)}} - \frac{2m_{(0,0,2)}m_{(2,0,0)}v_2^2}{m_{(0,0,0)}} + \frac{4m_{(0,0,1)}{}^2m_{(2,0,0)}v_2^2}{m_{(0,0,0)}{}^2} - \frac{6m_{(1,0,0)}m_{(1,0,2)}v_2^2}{m_{(0,0,0)}} - \frac{4m_{(1,0,1)}{}^2v_2^2}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(1,0,0)}m_{(1,0,1)}v_2^2}{m_{(0,0,0)}{}^2} - 2m_{(0,1,2)}v_1^2v_2 + \frac{36m_{(0,0,1)}m_{(0,1,1)}v_1^2v_2}{m_{(0,0,0)}} + \frac{10m_{(0,0,2)}m_{(0,1,0)}v_1^2v_2}{m_{(0,0,0)}} - \frac{24m_{(0,0,1)}{}^2m_{(0,1,0)}v_1^2v_2}{m_{(0,0,0)}{}^2} + 8m_{(1,1,2)}v_1v_2 - \frac{24m_{(0,0,1)}m_{(1,1,1)}v_1v_2}{m_{(0,0,0)}} - \frac{16m_{(0,0,2)}m_{(1,1,0)}v_1v_2}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}{}^2m_{(1,1,0)}v_1v_2}{m_{(0,0,0)}{}^2} - \frac{12m_{(0,1,0)}m_{(1,0,2)}v_1v_2}{m_{(0,0,0)}} - \frac{48m_{(0,1,1)}m_{(1,0,1)}v_1v_2}{m_{(0,0,0)}} + \frac{32m_{(0,0,1)}m_{(0,1,0)}m_{(1,0,1)}v_1v_2}{m_{(0,0,0)}{}^2} - \frac{12m_{(0,1,2)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}} + \frac{32m_{(0,0,1)}m_{(0,1,1)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}{}^2} + \frac{8m_{(0,0,2)}m_{(0,1,0)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}{}^2} - \frac{4m_{(0,0,2)}{}^2v_1v_2}{m_{(0,0,0)}} - 2m_{(2,1,2)}v_2 + \frac{4m_{(0,0,1)}m_{(2,1,1)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)}m_{(2,1,0)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(2,0,2)}v_2}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(2,0,1)}v_2}{m_{(0,0,0)}} + \frac{4m_{(0,1,2)}m_{(2,0,0)}v_2}{m_{(0,0,0)}} - \frac{8m_{(0,0,1)}m_{(0,1,1)}m_{(2,0,0)}v_2}{m_{(0,0,0)}{}^2} - \frac{4m_{(0,0,2)}m_{(0,1,0)}m_{(2,0,0)}v_2}{m_{(0,0,0)}{}^2} + \frac{4m_{(1,0,0)}m_{(1,1,2)}v_2}{m_{(0,0,0)}} + \frac{16m_{(1,0,1)}m_{(1,1,1)}v_2}{m_{(0,0,0)}} + \frac{8m_{(1,0,2)}m_{(1,1,0)}v_2}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}m_{(1,0,1)}m_{(1,1,0)}v_2}{m_{(0,0,0)}{}^2} - \frac{8m_{(1,0,0)}m_{(1,0,1)}{}^2v_2}{m_{(0,0,0)}{}^2} - \frac{16m_{(0,1,1)}m_{(1,0,0)}m_{(1,0,1)}v_2}{m_{(0,0,0)}{}^2} - \frac{4m_{(0,0,2)}{}^2m_{(1,0,0)}v_2}{m_{(0,0,0)}{}^2} - \frac{6m_{(0,0,1)}m_{(0,2,1)}v_1^2}{m_{(0,0,0)}} - \frac{2m_{(0,0,2)}m_{(0,2,0)}v_1^2}{m_{(0,0,0)}} + \frac{4m_{(0,0,1)}{}^2m_{(0,2,0)}v_1^2}{m_{(0,0,0)}{}^2} - \frac{6m_{(0,1,0)}m_{(0,1,2)}v_1^2}{m_{(0,0,0)}} - \frac{4m_{(0,1,1)}{}^2v_1^2}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(0,1,0)}m_{(0,1,1)}v_1^2}{m_{(0,0,0)}{}^2} - 2m_{(1,2,2)}v_1 + \frac{4m_{(0,0,1)}m_{(1,2,1)}v_1}{m_{(0,0,0)}} +$$

$\frac{4m_{(0,0,2)}m_{(1,2,0)}v_1}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)}m_{(1,1,2)}v_1}{m_{(0,0,0)}} + \frac{16m_{(0,1,1)}m_{(1,1,1)}v_1}{m_{(0,0,0)}} + \frac{8m_{(0,1,2)}m_{(1,1,0)}v_1}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}m_{(0,1,1)}m_{(1,1,0)}v_1}{{m_{(0,0,0)}}^2} + \frac{4m_{(0,2,0)}m_{(1,0,2)}v_1}{m_{(0,0,0)}} + \frac{8m_{(0,2,1)}m_{(1,0,1)}v_1}{m_{(0,0,0)}} - \frac{8m_{(0,0,1)}m_{(0,2,0)}m_{(1,0,1)}v_1}{{m_{(0,0,0)}}^2} - \frac{16m_{(0,1,0)}m_{(0,1,1)}m_{(1,0,1)}v_1}{{m_{(0,0,0)}}^2} + \frac{2m_{(0,2,2)}m_{(1,0,0)}v_1}{m_{(0,0,0)}} - \frac{4m_{(0,0,2)}m_{(0,2,0)}m_{(1,0,0)}v_1}{{m_{(0,0,0)}}^2} - \frac{8m_{(0,1,1)}{}^2m_{(1,0,0)}v_1}{{m_{(0,0,0)}}^2} - \frac{4m_{(0,0,2)}{}^2m_{(1,0,0)}v_1}{{m_{(0,0,0)}}^2} + m_{(2,2,2)} - \frac{m_{(0,0,2)}m_{(2,2,0)}}{m_{(0,0,0)}} - \frac{4m_{(0,1,1)}m_{(2,1,1)}}{m_{(0,0,0)}} - \frac{2m_{(0,1,2)}m_{(2,1,0)}}{m_{(0,0,0)}} - \frac{m_{(0,2,0)}m_{(2,0,2)}}{m_{(0,0,0)}} - \frac{2m_{(0,2,1)}m_{(2,0,1)}}{m_{(0,0,0)}} - \frac{m_{(0,2,2)}m_{(2,0,0)}}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)}m_{(0,2,0)}m_{(2,0,0)}}{{m_{(0,0,0)}}^2} + \frac{4m_{(0,1,1)}{}^2m_{(2,0,0)}}{{m_{(0,0,0)}}^2} - \frac{4m_{(1,0,1)}m_{(1,2,1)}}{m_{(0,0,0)}} - \frac{2m_{(1,0,2)}m_{(1,2,0)}}{m_{(0,0,0)}} - \frac{4m_{(1,1,0)}m_{(1,1,2)}}{m_{(0,0,0)}} - \frac{4m_{(1,1,1)}{}^2}{m_{(0,0,0)}} + \frac{16m_{(0,1,1)}m_{(1,0,1)}m_{(1,1,0)}}{{m_{(0,0,0)}}^2} + \frac{4m_{(0,0,2)}{}^2m_{(1,1,0)}}{{m_{(0,0,0)}}^2} + \frac{4m_{(0,2,0)}m_{(1,0,1)}{}^2}{{m_{(0,0,0)}}^2}.$

The equilibrium cumulant vector $\boldsymbol{\gamma}^{(eq)}$ is defined by

$$\boldsymbol{\gamma}^{(eq)} = \left(\rho, 0, 0, 0, 0, 0, 0, \rho c_s^2, \rho c_s^2, \rho c_s^2, 0, 0, \cdots, 0\right)^T.$$

2.6.2 Conservation of mass: ρ

$\frac{\partial\rho}{\partial t} + \frac{v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-1+v_1^2+3c_s^2)\frac{v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} +$
$(-1+3v_1^2+c_s^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+v_2^2+3c_s^2)\frac{v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-1+3v_2^2+c_s^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} -$
$\frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+v_3^2+3c_s^2)\frac{v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + (-1+3v_3^2+c_s^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}$
$+ (2c_s^4+3v_1^2\omega_4+24v_1^2c_s^2+6v_1^4-\omega_4c_s^4-12v_1^2\omega_4c_s^2+\omega_4c_s^2-6v_1^2-2c_s^2-3v_1^4\omega_4)\frac{\delta_l^4}{24\omega_4\delta_t}\frac{\partial^4\rho}{\partial x_1^4} +$
$(-4+2\omega_4-5v_1^2\omega_4-3\omega_4c_s^2+10v_1^2+6c_s^2)\frac{v_1\rho\delta_l^4}{12\omega_4\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} +$
$(3\omega_4+v_1^2\omega_9+3\omega_4c_s^2\omega_9-3v_1^2\omega_4-9\omega_4c_s^2-\omega_9+3c_s^2\omega_9-\omega_4\omega_9+v_1^2\omega_4\omega_9)\frac{v_1\rho\delta_l^4}{12\omega_4\omega_9\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + (-2+\omega_1)\frac{c_s^4\delta_l^4}{6\omega_1\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$
$+ (-\omega_7\omega_5-\omega_7+3\omega_7c_s^2\omega_5-9c_s^2\omega_5+3\omega_5+\omega_7v_2^2-3v_2^2\omega_5+3\omega_7c_s^2+\omega_7v_2^2\omega_5)\frac{v_2\rho\delta_l^4}{12\omega_7\omega_5\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$
$(2c_s^4-12v_2^2c_s^2\omega_5-3v_2^4\omega_5+c_s^2\omega_5+24v_2^2c_s^2+6v_2^4+3v_2^2\omega_5-6v_2^2-2c_s^2-c_s^4\omega_5)\frac{\delta_l^4}{24\omega_5\delta_t}\frac{\partial^4\rho}{\partial x_2^4} +$
$(-4-3c_s^2\omega_5+2\omega_5-5v_2^2\omega_5+10v_2^2+6c_s^2)\frac{v_2\rho\delta_l^4}{12\omega_5\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} +$
$(3\omega_4c_s^2\omega_{12}+v_1^2\omega_{12}+3\omega_4-3v_1^2\omega_4-9\omega_4c_s^2-\omega_{12}+v_1^2\omega_4\omega_{12}-\omega_4\omega_{12}+3c_s^2\omega_{12})\frac{v_1\rho\delta_l^4}{12\omega_4\omega_{12}\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$
$(3c_s^2\omega_{11}-\omega_{11}\omega_5-\omega_{11}-9c_s^2\omega_5+v_2^2\omega_{11}\omega_5+3\omega_5-3v_2^2\omega_5+v_2^2\omega_{11}+3c_s^2\omega_{11}\omega_5)\frac{v_2\rho\delta_l^4}{12\omega_{11}\omega_5\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$
$(-2+\omega_2)\frac{c_s^4\delta_l^4}{6\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + (-2+\omega_3)\frac{c_s^4\delta_l^4}{6\omega_3\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} +$
$(3c_s^2\omega_8\omega_6+3c_s^2\omega_8+v_3^2\omega_8\omega_6-\omega_8-3v_3^2\omega_6+v_3^2\omega_8+3\omega_6-9c_s^2\omega_6-\omega_8\omega_6)\frac{v_3\rho\delta_l^4}{12\omega_8\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} +$
$(3c_s^2\omega_6\omega_{10}+v_3^2\omega_6\omega_{10}+3c_s^2\omega_{10}-3v_3^2\omega_6+3\omega_6-9c_s^2\omega_6-\omega_6\omega_{10}-\omega_{10}+v_3^2\omega_{10})\frac{v_3\rho\delta_l^4}{12\omega_6\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$
$(2c_s^4+24v_3^2c_s^2-12v_3^2c_s^2\omega_6-c_s^4\omega_6+6v_3^4+3v_3^2\omega_6-6v_3^2-2c_s^2-3v_3^4\omega_6+c_s^2\omega_6)\frac{\delta_l^4}{24\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_3^4} +$
$(-4-5v_3^2\omega_6+10v_3^2+2\omega_6+6c_s^2-3c_s^2\omega_6)\frac{v_3\rho\delta_l^4}{12\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0.$

2.6.3 Conservation of momentum: ρv_1

$v_1\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (v_1^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{2v_1\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{v_1\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_3} +$
$\frac{v_1\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_4-3v_1^2\omega_4-2\omega_4c_s^2+6v_1^2+4c_s^2)\frac{\delta_l^2}{\omega_4\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + (2-\omega_4)\frac{3v_1\rho\delta_l^2}{\omega_4\delta_t}\left(\frac{\partial v_1}{\partial x_1}\right)^2 +$
$(-2+\omega_1)\frac{c_s^2\delta_l^2}{2\omega_1\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\omega_1\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + (-2+\omega_2)\frac{c_s^2\delta_l^2}{2\omega_2\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2+\omega_2)\frac{c_s^2\delta_l^2}{2\omega_2\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} +$
$(-2+\omega_4-v_1^2\omega_4-3\omega_4c_s^2+2v_1^2+6c_s^2)\frac{v_1\delta_l^2}{2\omega_4\delta_t}\frac{\partial^2\rho}{\partial x_1^2} + (-2+\omega_4-3v_1^2\omega_4-\omega_4c_s^2+6v_1^2+2c_s^2)\frac{\rho\delta_l^2}{2\omega_4\delta_t}\frac{\partial^2 v_1}{\partial x_1^2} +$
$(-2+\omega_1)\frac{c_s^2\rho\delta_l^2}{2\omega_1\delta_t}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2+\omega_1)\frac{c_s^2\rho\delta_l^2}{2\omega_1\delta_t}\frac{\partial^2 v_1}{\partial x_2^2} + (-2+\omega_2)\frac{c_s^2\rho\delta_l^2}{2\omega_2\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2+\omega_2)\frac{c_s^2\rho\delta_l^2}{2\omega_2\delta_t}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\omega_4^2\delta_t}\frac{\partial^3\rho}{\partial x_1^3} +$

$$
\begin{aligned}
&(-24+24\omega_4+11v_1^2\omega_4^2+5\omega_4^2c_s^2-60v_1^2\omega_4-36\omega_4c_s^2+60v_1^2-4\omega_4^2+36c_s^2)\frac{v_1\rho\delta_l^3}{6\omega_4^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^3}+C_2\frac{v_1\rho\delta_l^3}{12\omega_4^2\omega_1\omega_9\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2}+\\
&(-12+12\omega_1-\omega_1^2)\frac{c_s^4\delta_l^3}{6\omega_1^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2}-\frac{v_1c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2}+(-1+v_2^2+3c_s^2)\frac{v_2v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3}+C_3\frac{v_2\rho\delta_l^3}{6\omega_7\omega_1\delta_t}\frac{\partial^3 v_1}{\partial x_2^3}+\\
&(-1+3v_2^2+c_s^2)\frac{v_1\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3}+C_4\frac{v_1\rho\delta_l^3}{12\omega_4^2\omega_2\omega_{12}\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3}-\frac{v_1c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3}+(-12+12\omega_2-\omega_2^2)\frac{c_s^4\delta_l^3}{6\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_3^2}-\\
&\frac{v_1c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2}-\frac{v_1c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2}+(-1+v_3^2+3c_s^2)\frac{v_3v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3}+C_5\frac{v_3\rho\delta_l^3}{6\omega_8\omega_2\delta_t}\frac{\partial^3 v_1}{\partial x_3^3}+(-1+3v_3^2+c_s^2)\frac{v_1\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}+\\
&C_6\frac{v_1\delta_l^4}{12\omega_4^3\delta_t}\frac{\partial^4\rho}{\partial x_1^4}+C_7\frac{\rho\delta_l^4}{12\omega_4^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^4}+C_8\frac{\rho\delta_l^4}{12\omega_4^3\omega_1^3\omega_9^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}+C_9\frac{v_1c_s^2\delta_l^4}{12\omega_4^3\omega_1^2\omega_9^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}+C_{10}\frac{c_s^2\rho\delta_l^4}{12\omega_4^2\omega_1^3\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2}+\\
&C_{11}\frac{v_2c_s^2\delta_l^4}{12\omega_7^2\omega_1^2\omega_5\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3}+(-\omega_7\omega_5-\omega_7+3\omega_7c_s^2\omega_5-9c_s^2\omega_5+3\omega_5+\omega_7v_2^2-3v_2^2\omega_5+3\omega_7c_s^2+\omega_7v_2^2\omega_5)\frac{v_2v_1\rho\delta_l^4}{12\omega_7\omega_5\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3}\\
&+C_{12}\frac{c_s^2\rho\delta_l^4}{12\omega_7\omega_1^3\omega_5\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3}+\\
&(2c_s^4-12v_2^2c_s^2\omega_5-3v_2^4\omega_5+c_s^2\omega_5+24v_2^2c_s^2+6v_2^4+3v_2^2\omega_5-6v_2^2-2c_s^2-c_s^4\omega_5)\frac{v_1\delta_l^4}{24\omega_5\delta_t}\frac{\partial^4\rho}{\partial x_2^4}+C_{13}\frac{\rho\delta_l^4}{24\omega_7^2\omega_1^3\delta_t}\frac{\partial^4 v_1}{\partial x_2^4}+\\
&(-4-3c_s^2\omega_5+2\omega_5-5v_2^2\omega_5+10v_2^2+6c_s^2)\frac{v_2v_1\rho\delta_l^4}{12\omega_5\delta_t}\frac{\partial^4 v_2}{\partial x_2^4}+C_{14}\frac{\rho\delta_l^4}{12\omega_4^3\omega_2^3\omega_{12}^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}+C_{15}\frac{c_s^4\rho\delta_l^4}{12\omega_{13}\omega_1^3\omega_2^2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3}+\\
&(3c_s^2\omega_{11}-\omega_{11}\omega_5-\omega_{11}-9c_s^2\omega_5+v_2^2\omega_{11}\omega_5+3\omega_5-3v_2^2\omega_5+v_2^2\omega_{11}+3c_s^2\omega_{11}\omega_5)\frac{v_2v_1\rho\delta_l^4}{12\omega_{11}\omega_5\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}+\\
&C_{16}\frac{v_1c_s^2\delta_l^4}{12\omega_4^3\omega_2^2\omega_{12}^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}+C_{17}\frac{c_s^2\rho\delta_l^4}{12\omega_4^2\omega_2^3\omega_{12}\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}+C_{18}\frac{c_s^4\rho\delta_l^4}{12\omega_{13}\omega_1^2\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2}+(-2+\omega_3)\frac{v_1c_s^4\delta_l^4}{6\omega_3\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}+\\
&(-\omega_{13}\omega_1\omega_2-2\omega_1\omega_2+2\omega_1\omega_2^2-\omega_2^2+\omega_{13}\omega_1-\omega_1^2\omega_2^2+2\omega_1^2\omega_2-\omega_1^2+\omega_{13}\omega_2)\frac{c_s^4\rho\delta_l^4}{\omega_{13}\omega_1^2\omega_2^2\delta_t}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2}+\\
&C_{19}\frac{v_3c_s^2\delta_l^4}{12\omega_8^2\omega_2^2\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3}+(3c_s^2\omega_8\omega_6+3c_s^2\omega_8+v_3^2\omega_8\omega_6-\omega_8-3v_3^2\omega_6+v_3^2\omega_8+3\omega_6-9c_s^2\omega_6-\omega_8\omega_6)\frac{v_3v_1\rho\delta_l^4}{12\omega_8\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}\\
&+C_{20}\frac{c_s^2\rho\delta_l^4}{12\omega_8\omega_2^3\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3}+\\
&(3c_s^2\omega_6\omega_{10}+v_3^2\omega_6\omega_{10}+3c_s^2\omega_{10}-3v_3^2\omega_6+3\omega_6-9c_s^2\omega_6-\omega_6\omega_{10}-\omega_{10}+v_3^2\omega_{10})\frac{v_3v_1\rho\delta_l^4}{12\omega_6\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3}+\\
&(2c_s^4+24v_3^2c_s^2-12v_3^2c_s^2\omega_6-c_s^4\omega_6+6v_3^4+3v_3^2\omega_6-6v_3^2-2c_s^2-3v_3^4\omega_6+c_s^2\omega_6)\frac{v_1\delta_l^4}{24\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_3^4}+C_{21}\frac{\rho\delta_l^4}{24\omega_8^2\omega_2^3\delta_t}\frac{\partial^4 v_1}{\partial x_3^4}+\\
&(-4-5v_3^2\omega_6+10v_3^2+2\omega_6+6c_s^2-3c_s^2\omega_6)\frac{v_3v_1\rho\delta_l^4}{12\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_3^4}=0,
\end{aligned}
$$

where:

$$
C_1=12c_s^4-7v_1^2\omega_4^2-\omega_4^2c_s^2+36v_1^2\omega_4+144v_1^2c_s^2+24v_1^2\omega_4^2c_s^2+36v_1^4-12\omega_4c_s^4-144v_1^2\omega_4c_s^2+\omega_4^2c_s^4+7v_1^4\omega_4^2+12\omega_4c_s^2-36v_1^2-12c_s^2-36v_1^4\omega_4
$$

$$
\begin{aligned}
C_2=&-3v_1^2\omega_4^2\omega_1\omega_9-36\omega_4c_s^2\omega_1+6v_1^2\omega_4^2\omega_9-12\omega_4^2\omega_1-6\omega_4^2\omega_9-12v_1^2\omega_4^2+12v_1^2\omega_4^2\omega_1-36\omega_4^2c_s^2+3\omega_4^2\omega_1\omega_9+12v_1^2\omega_1\omega_9-18\omega_4c_s^2\omega_1\omega_9-\\
&12\omega_1\omega_9+6\omega_4\omega_1\omega_9+36c_s^2\omega_1\omega_9+12\omega_4^2+36\omega_4^2c_s^2\omega_1-6v_1^2\omega_4\omega_1\omega_9-12v_1^2\omega_4\omega_1+18\omega_4^2c_s^2\omega_9-11\omega_4^2c_s^2\omega_1\omega_9+12\omega_4\omega_1
\end{aligned}
$$

$$
C_3=6-3\omega_7+3v_2^2\omega_1-3\omega_1-\omega_7v_2^2\omega_1+3\omega_7v_2^2-3\omega_7c_s^2\omega_1-6v_2^2+\omega_7\omega_1-18c_s^2+9\omega_7c_s^2+9c_s^2\omega_1
$$

$$
\begin{aligned}
C_4=&-11\omega_4^2c_s^2\omega_2\omega_{12}-6\omega_4^2\omega_{12}+6v_1^2\omega_4^2\omega_{12}-12v_1^2\omega_4^2-6v_1^2\omega_4\omega_2\omega_{12}-36\omega_4^2c_s^2+12v_1^2\omega_4^2\omega_2+36c_s^2\omega_2\omega_{12}-36\omega_4c_s^2\omega_2+6\omega_4\omega_2\omega_{12}-\\
&12\omega_4^2\omega_2-12\omega_2\omega_{12}+12\omega_4\omega_2-18\omega_4c_s^2\omega_2\omega_{12}+36\omega_4^2c_s^2\omega_2+12v_1^2\omega_2\omega_{12}+3\omega_4^2\omega_2\omega_{12}-12v_1^2\omega_4\omega_2+12\omega_4^2+18\omega_4^2c_s^2\omega_{12}-3v_1^2\omega_4^2\omega_2\omega_{12}
\end{aligned}
$$

$$
C_5=6+3v_3^2\omega_2+9c_s^2\omega_8-v_3^2\omega_8\omega_2-3\omega_8-3c_s^2\omega_8\omega_2-3\omega_2-6v_3^2+\omega_8\omega_2+9c_s^2\omega_2+3v_3^2\omega_8-18c_s^2
$$

$$
\begin{aligned}
C_6=&12+10v_1^2\omega_4^3+144c_s^4+6\omega_4^3c_s^2-18\omega_4-98v_1^2\omega_4^2-34v_1^2\omega_4^3c_s^2-78\omega_4^2c_s^2+234v_1^2\omega_4+672v_1^2c_s^2+404v_1^2\omega_4^2c_s^2+144v_1^4-216\omega_4c_s^4-\\
&1008v_1^2\omega_4c_s^2-\omega_4^3+82\omega_4^2c_s^4+90v_1^4\omega_4^2+198\omega_4c_s^2-9v_1^4\omega_4^3-156v_1^2+8\omega_4^2-132c_s^2-5\omega_4^3c_s^4-216v_1^4\omega_4
\end{aligned}
$$

$$
\begin{aligned}
C_7=&12+14v_1^2\omega_4^3+24c_s^4+2\omega_4^3c_s^2-18\omega_4-154v_1^2\omega_4^2-18v_1^2\omega_4^3c_s^2-22\omega_4^2c_s^2+378v_1^2\omega_4+432v_1^2c_s^2+252v_1^2\omega_4^2c_s^2+504v_1^4-36\omega_4c_s^4-\\
&648v_1^2\omega_4c_s^2-\omega_4^3+14\omega_4^2c_s^4+310v_1^4\omega_4^2+54\omega_4c_s^2-29v_1^4\omega_4^3-252v_1^2+8\omega_4^2-36c_s^2-\omega_4^3c_s^4-756v_1^4\omega_4
\end{aligned}
$$

$$
\begin{aligned}
C_8=&\\
&36v_1^2\omega_4^3c_s^2\omega_1\omega_9+90v_1^2\omega_4\omega_1^3\omega_9^2+39v_1^2\omega_4^3\omega_1^3\omega_9-5\omega_4^3c_s^2\omega_1^2\omega_9^2-6\omega_4^2c_s^4\omega_1^3\omega_9-\omega_4^3c_s^4\omega_1^3\omega_9^2-12\omega_4^2c_s^2\omega_1^2\omega_9+12c_s^4\omega_1^3\omega_9^2+36v_1^2\omega_4^3\omega_1^2+252v_1^2c_s^2\omega_1^3\omega_9^2+\\
&6v_1^2\omega_4^3\omega_1^2\omega_9^2-36v_1^4\omega_4^2\omega_1^3+6\omega_4^2c_s^4\omega_1^2\omega_9^2-6\omega_4^3c_s^2\omega_1^3\omega_9+72v_1^4\omega_4^2\omega_1^3\omega_9-306v_1^2\omega_4c_s^2\omega_1^3\omega_9^2-\omega_4^2c_s^2\omega_1^3\omega_9^2-18\omega_4^3c_s^4\omega_1^2\omega_9-36v_1^2\omega_4^3\omega_1^3+19v_1^4\omega_4^2\omega_1^3\omega_9^2-\\
&108v_1^2\omega_4c_s^2\omega_1^3\omega_9+13\omega_4^3c_s^4\omega_1^2\omega_9^2+6\omega_4^2c_s^2\omega_1^3\omega_9-108v_1^2\omega_4^3c_s^2\omega_1^2-36v_1^2\omega_4^3\omega_1^2\omega_9-36v_1^4\omega_4^3\omega_1^2+12\omega_4^2c_s^4\omega_1^2\omega_9-12c_s^2\omega_1^3\omega_9^2+108v_1^2\omega_4^3c_s^2\omega_1^3+36v_1^2\omega_4^2\omega_1^3-\\
&6\omega_4^2c_s^2\omega_1^2\omega_9^2+6\omega_4^3c_s^4\omega_1^3\omega_9-36v_1^2\omega_4c_s^2\omega_1^2\omega_9^2-18v_1^2\omega_4^3c_s^2\omega_1\omega_9^2+36v_1^2\omega_4\omega_1^3\omega_9-4v_1^2\omega_4^3\omega_1^3\omega_9^2+\omega_4^2c_s^4\omega_1^3\omega_9^2+18\omega_4^3c_s^2\omega_1^2\omega_9+36v_1^4\omega_4^3\omega_1^3-39v_1^4\omega_4^3\omega_1^3\omega_9-\\
&90v_1^4\omega_4\omega_1^3\omega_9^2+36v_1^2\omega_4^2c_s^2\omega_1^2\omega_9+12\omega_4^3c_s^4\omega_9^2-72v_1^2\omega_1^3\omega_9^2-3v_1^2\omega_4^3c_s^2\omega_1^2\omega_9^2-12\omega_4^3c_s^2\omega_1\omega_9+12\omega_4c_s^2\omega_1^3\omega_9^2+60v_1^2\omega_4^2c_s^2\omega_1^3\omega_9^2-6v_1^4\omega_4^3\omega_1^2\omega_9^2-\\
&24\omega_4^3c_s^4\omega_1\omega_9^2-72v_1^2\omega_4^2\omega_1^3\omega_9-99v_1^2\omega_4^3c_s^2\omega_1^3\omega_9-12\omega_4c_s^4\omega_1^2\omega_9^2+12v_1^2\omega_4^3c_s^2\omega_1^3\omega_9^2-19v_1^2\omega_4^2\omega_1^3\omega_9^2+198v_1^2\omega_4^2c_s^2\omega_1^3\omega_9-108v_1^2\omega_4^2c_s^2\omega_1^3+72v_1^4\omega_1^3\omega_9^2+\\
&36v_1^4\omega_4^3\omega_1^2\omega_9+12\omega_4^3c_s^4\omega_1\omega_9-12\omega_4c_s^4\omega_1^3\omega_9^2+54v_1^2\omega_4^3c_s^2\omega_1^2\omega_9+6\omega_4^3c_s^2\omega_1\omega_9^2+4v_1^4\omega_4^3\omega_1^3\omega_9^2-36v_1^4\omega_4\omega_1^3\omega_9+18v_1^2\omega_4^2c_s^2\omega_1^2\omega_9^2+12\omega_4c_s^2\omega_1^2\omega_9^2
\end{aligned}
$$

$$
\begin{aligned}
C_9=&-12\omega_4^3\omega_9^2+12v_1^2\omega_4^2\omega_1\omega_9+36\omega_4^3c_s^2\omega_1^2+36c_s^2\omega_1^2\omega_9^2+5\omega_4^3c_s^2\omega_1^2\omega_9^2+18\omega_4^2c_s^2\omega_1^2\omega_9+12v_1^2\omega_4^3\omega_1^2+18\omega_4\omega_1^2\omega_9^2+6\omega_4^3\omega_1^2\omega_9+v_1^2\omega_4^3\omega_1^2\omega_9^2+\\
&12v_1^2\omega_4^3\omega_9^2+36\omega_4^3c_s^2\omega_9^2-12\omega_4^3\omega_1^2-6\omega_4^2\omega_1\omega_9^2+12\omega_4^3\omega_1-36\omega_4^3c_s^2\omega_9-12\omega_4^2\omega_1\omega_9-12v_1^2\omega_4^2\omega_1^2-6v_1^2\omega_4^3\omega_1^2\omega_9-12v_1^2\omega_4^3\omega_9-18v_1^2\omega_4\omega_1^2\omega_9^2+\\
&12\omega_4^2\omega_9^2+12\omega_4^2c_s^2\omega_1^2\omega_9^2-12v_1^2\omega_4^3\omega_1+12\omega_4^2\omega_1^2-\omega_4^3\omega_1^2\omega_9^2-36\omega_4^3c_s^2\omega_1+6v_1^2\omega_4^2\omega_1\omega_9^2+12\omega_4^3\omega_9-18\omega_4^3c_s^2\omega_1^2\omega_9-12v_1^2\omega_4^2\omega_9^2+18\omega_4^2c_s^2\omega_1\omega_9^2-
\end{aligned}
$$

$36\omega_4^2c_s^2\omega_9^2 + 12\omega_4^3\omega_1\omega_9^2 + 4v_1^2\omega_4^2\omega_1^2\omega_9^2 + 54\omega_4^3c_s^2\omega_1\omega_9 - 6\omega_4^2\omega_1^2\omega_9 - 36\omega_4^2c_s^2\omega_1^2 + 18v_1^2\omega_4^3\omega_1\omega_9 - 12v_1^2\omega_4^3\omega_1\omega_9^2 + 12v_1^2\omega_1^2\omega_9^2 - 4\omega_4^2\omega_1^2\omega_9^2 + 6v_1^2\omega_4^2\omega_1^2\omega_9 - 40\omega_4^3c_s^2\omega_1\omega_9^2 - 12\omega_1^2\omega_9^2 + 36\omega_4^2c_s^2\omega_1\omega_9 - 18\omega_4^3\omega_1\omega_9 - 54\omega_4c_s^2\omega_1^2\omega_9^2$

$C_{10} = -4\omega_4^2c_s^2\omega_1^2\omega_9 - 12\omega_4^2\omega_1 + 36v_1^2\omega_4\omega_1^2\omega_9 + 36v_1^2\omega_4^2\omega_1 - 12\omega_4^2\omega_1^3 - \omega_4^2c_s^2\omega_1^3\omega_9 + 36v_1^2\omega_1^3 - 72v_1^2\omega_4^2\omega_1^2 - 24\omega_4c_s^2\omega_1^3 + 36v_1^2\omega_4^2\omega_1^3 - 12\omega_4\omega_1^2\omega_9 + 24\omega_4^2\omega_1^2 - 12\omega_4c_s^2\omega_1\omega_9 + 24\omega_4c_s^2\omega_1^2 - 12c_s^2\omega_1^2\omega_9 + 12\omega_4\omega_1\omega_9 - 72v_1^2\omega_4\omega_1^3 + 12\omega_4c_s^2\omega_1^2\omega_9 - 24\omega_4\omega_1^2 + 12\omega_4^2c_s^2\omega_1^3 + 12\omega_1^2\omega_9 + 24\omega_4\omega_1^3 + 72v_1^2\omega_4\omega_1^2 + 12c_s^2\omega_1^3 - 24\omega_4^2c_s^2\omega_1^2 - 36v_1^2\omega_1^2\omega_9 + 12\omega_4^2c_s^2\omega_1 - 12\omega_1^3 - 36v_1^2\omega_4\omega_1\omega_9 - 12\omega_4^2c_s^2\omega_9 + 18\omega_4^2c_s^2\omega_1\omega_9$

$C_{11} = \omega_7^2v_2^2\omega_1^2\omega_5 + 12\omega_7\omega_5 - 36\omega_7^2c_s^2 - 36c_s^2\omega_1\omega_5 - 6\omega_1^2\omega_5 + 3\omega_7^2c_s^2\omega_1^2 - \omega_7^2\omega_1^2 - 36\omega_7c_s^2\omega_5 - 9\omega_7c_s^2\omega_1^2\omega_5 + 12\omega_7^2v_2^2\omega_5 - 6\omega_7v_2^2\omega_1^2 + 6v_2^2\omega_1^2\omega_5 + 12\omega_7v_2^2\omega_1 - 6\omega_7^2\omega_1 + 12\omega_7^2\omega_1\omega_5 + 18\omega_7^2c_s^2\omega_1 - 36\omega_7^2c_s^2\omega_1\omega_5 - 12\omega_7^2v_2^2 + 18\omega_7v_2^2\omega_1\omega_5 + 3\omega_7\omega_1^2\omega_5 + 6\omega_7^2v_2^2\omega_1 + 12\omega_7^2 - 3\omega_7v_2^2\omega_1^2\omega_5 - 18\omega_7\omega_1\omega_5 + 36\omega_7c_s^2\omega_1 - 12v_2^2\omega_1\omega_5 + 3\omega_7^2c_s^2\omega_1^2\omega_5 - 12\omega_7\omega_1 - \omega_7^2\omega_1^2\omega_5 + 6\omega_7\omega_1^2 + 54\omega_7c_s^2\omega_1\omega_5 - 12\omega_7^2v_2^2\omega_1\omega_5 + 36\omega_7^2c_s^2\omega_5 - 12\omega_7^2\omega_5 - 18\omega_7c_s^2\omega_1^2 + 12\omega_1\omega_5 + 18c_s^2\omega_1^2\omega_5 + \omega_7^2v_2^2\omega_1^2 - 12\omega_7v_2^2\omega_5$

$C_{12} = 12c_s^2\omega_1\omega_5 + 18\omega_1^2\omega_5 + 18v_2^2\omega_1^3\omega_5 + 3\omega_7v_2^2\omega_1^3 - 12\omega_7c_s^2\omega_5 - 5\omega_7c_s^2\omega_1^2\omega_5 + 18\omega_7v_2^2\omega_1^2 - 54v_2^2\omega_1^2\omega_5 - 36\omega_7v_2^2\omega_1 - 6\omega_1^3\omega_5 + 36v_2^2\omega_1^2 - \omega_7c_s^2\omega_1^3\omega_5 - 18v_2^2\omega_1^3 + \omega_7\omega_1^2\omega_5 + 12c_s^2\omega_1^2 - 3\omega_7v_2^2\omega_1^2\omega_5 - 12\omega_7c_s^2\omega_1 + 36v_2^2\omega_1\omega_5 + 6c_s^2\omega_1^3\omega_5 - 6c_s^2\omega_1^3 + 12\omega_7\omega_1 + \omega_7c_s^2\omega_1^3 - 6\omega_7\omega_1^2 + 6\omega_1^3 + 18\omega_7c_s^2\omega_1\omega_5 - 12\omega_1^2 - \omega_7\omega_1^3 + 6\omega_7c_s^2\omega_1^2 - 12\omega_1\omega_5 - 18c_s^2\omega_1^2\omega_5$

$C_{13} = 144\omega_7v_2^2c_s^2\omega_1^2 + \omega_7^2c_s^2\omega_1^3 + 30\omega_7v_2^2\omega_1^3 - 8\omega_7^2c_s^2\omega_1^2 - 72\omega_7v_2^2c_s^2\omega_1^3 - 72\omega_7v_2^2\omega_1^2 + 24\omega_7c_s^4\omega_1 - 24\omega_7c_s^4\omega_1^2 + 12\omega_7^2c_s^2\omega_1 - 12\omega_7^2v_4^4\omega_1^2 + 72v_2^2\omega_1^2 + 6\omega_7c_s^4\omega_1^3 - 36v_2^2\omega_1^3 + 3\omega_7^2v_2^4\omega_1^3 + 72\omega_7v_2^2c_s^2\omega_1 + 24\omega_7^2c_s^4\omega_1^2 - 12\omega_7^2v_2^2c_s^2\omega_1^2 + 72\omega_7v_2^4\omega_1^2 - 24\omega_7c_s^2\omega_1 - 3\omega_7^2c_s^4\omega_1^3 - 30\omega_7v_2^4\omega_1^3 + 6\omega_7^2v_2^2c_s^2\omega_1^3 - 6\omega_7c_s^2\omega_1^3 - 216v_2^2c_s^2\omega_1^2 - 3\omega_7^2v_2^2\omega_1^3 + 36v_2^4\omega_1^3 + 24\omega_7^2c_s^4 - 36\omega_7^2v_2^2c_s^2\omega_1 + 24\omega_7c_s^2\omega_1^2 - 48\omega_7^2c_s^4\omega_1 - 72v_2^4\omega_1^2 + 108v_2^2c_s^2\omega_1^3 + 12\omega_7^2v_2^2\omega_1^2$

$C_{14} = 4v_1^4\omega_4^3\omega_2^3\omega_{12}^2 + 108v_1^2\omega_4^3c_s^2\omega_2^3 + 36v_1^2\omega_4^2\omega_2^3 + 12\omega_4c_s^2\omega_2^2\omega_{12}^2 + 18v_1^2\omega_4^2c_s^2\omega_2^2\omega_{12}^2 - 36v_1^4\omega_4\omega_2^3\omega_{12} + 54v_1^2\omega_4^3c_s^2\omega_2^2\omega_{12} - 12\omega_4c_s^4\omega_2^3\omega_{12}^2 + 6\omega_4^3c_s^2\omega_2\omega_{12}^2 + 36v_1^4\omega_4^3\omega_2^3 + 198v_1^2\omega_4^2c_s^2\omega_2^3\omega_{12} + 72v_1^4\omega_2^3\omega_{12}^2 - 108v_1^2\omega_4^3c_s^2\omega_2^2 + 36v_1^4\omega_4^3\omega_2^2\omega_{12} + 12\omega_4^3c_s^4\omega_2\omega_{12} - 36v_1^4\omega_4^2\omega_2^2 + 12v_1^2\omega_4^3c_s^2\omega_2^3\omega_{12}^2 - 19v_1^2\omega_4^2\omega_2^2\omega_{12}^2 - 36v_1^4\omega_4^2\omega_2^3 - 72v_1^2\omega_4^2\omega_2^3\omega_{12} - 12\omega_4c_s^4\omega_2^2\omega_{12}^2 - 99v_1^2\omega_4^3c_s^2\omega_2^3\omega_{12} + 60v_1^2\omega_4^2c_s^2\omega_2^3\omega_{12}^2 + 12\omega_4c_s^2\omega_2^3\omega_{12}^2 - 6v_1^4\omega_4^3\omega_2^2\omega_{12}^2 - 24\omega_4^3c_s^4\omega_2\omega_{12}^2 - 36v_1^2\omega_4^3\omega_2^3 - 72v_1^2\omega_2^3\omega_{12}^2 - 3v_1^2\omega_4^3c_s^2\omega_2^2\omega_{12}^2 - 12\omega_4^3c_s^2\omega_2\omega_{12} - 39v_1^4\omega_4^3\omega_2^3\omega_{12} + 36v_1^2\omega_4^3\omega_2^2 + 36v_1^2\omega_4^2c_s^2\omega_2^2\omega_{12} - 90v_1^4\omega_4\omega_2^3\omega_{12}^2 + 36v_1^2\omega_4\omega_2^3\omega_{12} - 18v_1^2\omega_4^3c_s^2\omega_2\omega_{12}^2 - 4v_1^2\omega_4^3\omega_2^3\omega_{12}^2 + 18\omega_4^3c_s^2\omega_2^2\omega_{12} + \omega_4^2c_s^4\omega_2^3\omega_{12}^2 - 36v_1^2\omega_4c_s^2\omega_2^2\omega_{12}^2 + 6\omega_4^3c_s^4\omega_2^3\omega_{12} - 6\omega_4^2c_s^2\omega_2^2\omega_{12}^2 - 36v_1^2\omega_4^3\omega_2^2\omega_{12} + 12\omega_4^2c_s^4\omega_2^2\omega_{12} - 12c_s^2\omega_2^3\omega_{12}^2 + 12\omega_4^3c_s^4\omega_{12}^2 - 108v_1^2\omega_4^2c_s^2\omega_2^3 + 19v_1^4\omega_4^2\omega_2^3\omega_{12}^2 + 6\omega_4^2c_s^2\omega_2^3\omega_{12} + 13\omega_4^3c_s^4\omega_2^2\omega_{12}^2 - 108v_1^2\omega_4c_s^2\omega_2^3\omega_{12} + 72v_1^4\omega_4^2\omega_2^3\omega_{12} - 18\omega_4^3c_s^4\omega_2^2\omega_{12} - \omega_4^2c_s^2\omega_2^3\omega_{12}^2 - 306v_1^2\omega_4c_s^2\omega_2^3\omega_{12}^2 + 6v_1^2\omega_4^3\omega_2^2\omega_{12}^2 - 6\omega_4^3c_s^2\omega_2^3\omega_{12} + 6\omega_4^2c_s^4\omega_2^2\omega_{12}^2 - 12\omega_4^2c_s^2\omega_2^2\omega_{12} - \omega_4^3c_s^4\omega_2^3\omega_{12}^2 + 12c_s^4\omega_2^3\omega_{12}^2 + 252v_1^2c_s^2\omega_2^3\omega_{12}^2 + 90v_1^2\omega_4\omega_2^3\omega_{12}^2 + 36v_1^2\omega_4^3c_s^2\omega_2\omega_{12} + 39v_1^2\omega_4^3\omega_2^3\omega_{12} - 6\omega_4^2c_s^4\omega_2^3\omega_{12} - 5\omega_4^3c_s^2\omega_2^2\omega_{12}^2$

$C_{15} = -\omega_{13}\omega_1^3\omega_2^2\omega_3 - 12\omega_1^2\omega_2\omega_3 - 12\omega_1^3\omega_3 - 12\omega_1^3\omega_2^2\omega_3 - 6\omega_{13}\omega_1^2\omega_2\omega_3 + 24\omega_{13}\omega_1\omega_2^2\omega_3 + 12\omega_{13}\omega_1\omega_2^2 - 24\omega_{13}\omega_2^2\omega_3 - 12\omega_1^3\omega_2 - 6\omega_{13}\omega_1^2\omega_2^2 + 12\omega_{13}\omega_1\omega_2\omega_3 + 24\omega_1^3\omega_2\omega_3 - 2\omega_{13}\omega_1^2\omega_2^2\omega_3 - 6\omega_{13}\omega_1^3\omega_2 - 12\omega_1^2\omega_2^2 - 2\omega_{13}\omega_1^3\omega_2^2 + 12\omega_{13}\omega_1^3 + 12\omega_1^3\omega_2^2 + 12\omega_1^2\omega_2^2\omega_3$

$C_{16} = -12v_1^2\omega_4^3\omega_2 + 36\omega_4^2c_s^2\omega_2\omega_{12} - 54\omega_4c_s^2\omega_2^2\omega_{12}^2 - 18\omega_4^3\omega_2\omega_{12} + 36\omega_4^3c_s^2\omega_{12}^2 + 12\omega_4^2\omega_2^2 + 6v_1^2\omega_4^2\omega_2^2\omega_{12} - 36\omega_4^3c_s^2\omega_2 - 40\omega_4^3c_s^2\omega_2\omega_{12}^2 + 12v_1^2\omega_4^3\omega_{12}^2 - 12\omega_2^2\omega_{12}^2 + 12\omega_4^3\omega_2 - 12v_1^2\omega_4^2\omega_2^2 - 4\omega_4^2\omega_2^2\omega_{12}^2 - 12v_1^2\omega_4^3\omega_2\omega_{12}^2 + 12v_1^2\omega_2^2\omega_{12}^2 - 12\omega_4^3\omega_{12}^2 - 12v_1^2\omega_4^2\omega_{12}^2 + 18v_1^2\omega_4^3\omega_2\omega_{12} + 12\omega_4^3\omega_{12} - 12\omega_4^3\omega_2^2 - 6\omega_4^2\omega_2^2\omega_{12} + 4v_1^2\omega_4^2\omega_2^2\omega_{12}^2 + 36\omega_4^3c_s^2\omega_2^2 + 12\omega_4^2\omega_{12}^2 - 12v_1^2\omega_4^3\omega_{12} + 54\omega_4^3c_s^2\omega_2\omega_{12} + 12v_1^2\omega_4^3\omega_2^2 + 18\omega_4^2c_s^2\omega_2\omega_{12}^2 + 12\omega_4^3\omega_2\omega_{12}^2 - 36\omega_4^3c_s^2\omega_{12} + 6v_1^2\omega_4^2\omega_2\omega_{12}^2 - 18\omega_4^3c_s^2\omega_2^2\omega_{12} + 12\omega_4^2c_s^2\omega_2^2\omega_{12}^2 - \omega_4^3\omega_2^2\omega_{12}^2 - 6v_1^2\omega_4^3\omega_2^2\omega_{12} - 18v_1^2\omega_4\omega_2^2\omega_{12}^2 - 36\omega_4^2c_s^2\omega_{12}^2 - 12\omega_4^2\omega_2\omega_{12} - 6\omega_4^2\omega_2\omega_{12}^2 - 36\omega_4^2c_s^2\omega_2^2 + v_1^2\omega_4^3\omega_2^2\omega_{12}^2 + 18\omega_4^2c_s^2\omega_2^2\omega_{12} + 18\omega_4\omega_2^2\omega_{12}^2 + 6\omega_4^3\omega_2^2\omega_{12} + 12v_1^2\omega_4^2\omega_2\omega_{12} + 36c_s^2\omega_2^2\omega_{12}^2 + 5\omega_4^3c_s^2\omega_2^2\omega_{12}^2$

$C_{17} = 36v_1^2\omega_4^2\omega_2^3 + 18\omega_4^2c_s^2\omega_2\omega_{12} + 24\omega_4^2\omega_2^2 + 24\omega_4c_s^2\omega_2^2 - 12\omega_4^2\omega_2^3 - 72v_1^2\omega_4^2\omega_2^2 + 36v_1^2\omega_2^3 - 24\omega_4c_s^2\omega_2^3 - 36v_1^2\omega_4\omega_2\omega_{12} - 36v_1^2\omega_2^2\omega_{12} + 36v_1^2\omega_4^2\omega_2 + 12\omega_2^2\omega_{12} + 12\omega_4\omega_2\omega_{12} + 12\omega_4c_s^2\omega_2^2\omega_{12} - 12\omega_4^2\omega_2 - 12c_s^2\omega_2^2\omega_{12} - 12\omega_4\omega_2^2\omega_{12} - 12\omega_4c_s^2\omega_2\omega_{12} + 12\omega_4^2c_s^2\omega_2 - 12\omega_2^3 - \omega_4^2c_s^2\omega_2^3\omega_{12} + 24\omega_4\omega_2^3 - 12\omega_4^2c_s^2\omega_{12} + 12c_s^2\omega_2^3 + 72v_1^2\omega_4\omega_2^2 - 24\omega_4^2c_s^2\omega_2^2 + 36v_1^2\omega_4\omega_2^2\omega_{12} - 4\omega_4^2c_s^2\omega_2^2\omega_{12} - 72v_1^2\omega_4\omega_2^3 - 24\omega_4\omega_2^2 + 12\omega_4^2c_s^2\omega_2^3$

$C_{18} = -12\omega_1\omega_2^2\omega_3 - 24\omega_{13}\omega_1^2\omega_3 + 24\omega_{13}\omega_1^2\omega_2\omega_3 - 6\omega_{13}\omega_1\omega_2^3 + 24\omega_1\omega_2^3\omega_3 - 12\omega_1\omega_2^3 - 6\omega_{13}\omega_1\omega_2^2\omega_3 + 12\omega_1^2\omega_2^3 - 6\omega_{13}\omega_1^2\omega_2^2 + 12\omega_{13}\omega_1\omega_2\omega_3 - 12\omega_1^2\omega_2^3\omega_3 + 12\omega_{13}\omega_2^3 - 2\omega_{13}\omega_1^2\omega_2^3 - 2\omega_{13}\omega_1^2\omega_2^2\omega_3 - 12\omega_1^2\omega_2^2 - \omega_{13}\omega_1^2\omega_2^3\omega_3 + 12\omega_{13}\omega_1^2\omega_2 + 12\omega_1^2\omega_2^2\omega_3 - 12\omega_2^3\omega_3$

$C_{19} = -\omega_8^2\omega_2^2 - 12v_3^2\omega_8^2\omega_2\omega_6 - 18c_s^2\omega_8\omega_2^2 - 36c_s^2\omega_8\omega_6 - 12\omega_8^2\omega_6 - 3v_3^2\omega_8\omega_2^2\omega_6 - 12v_3^2\omega_8\omega_6 + 12\omega_8^2 - 6v_3^2\omega_8\omega_2^2 - 12v_3^2\omega_2\omega_6 + 12v_3^2\omega_8\omega_2 - \omega_8^2\omega_2^2\omega_6 - 9c_s^2\omega_8\omega_2^2\omega_6 - 36c_s^2\omega_8^2 - 36c_s^2\omega_8^2\omega_2\omega_6 - 6\omega_8^2\omega_2 + 36c_s^2\omega_8\omega_2 - 6\omega_2^2\omega_6 - 18\omega_8\omega_2\omega_6 - 36c_s^2\omega_2\omega_6 + 18c_s^2\omega_8^2\omega_2 - 12\omega_8\omega_2 + 3c_s^2\omega_8^2\omega_2^2\omega_6 + 18c_s^2\omega_2^2\omega_6 + 12\omega_2\omega_6 + 3\omega_8\omega_2^2\omega_6 + 6v_3^2\omega_2^2\omega_6 + 6v_3^2\omega_8^2\omega_2 + 12\omega_8^2\omega_2\omega_6 + 54c_s^2\omega_8\omega_2\omega_6 - 12v_3^2\omega_8^2 + 18v_3^2\omega_8\omega_2\omega_6 + 12v_3^2\omega_8^2\omega_6 + v_3^2\omega_8^2\omega_2^2 + 3c_s^2\omega_8^2\omega_2^2 + v_3^2\omega_8^2\omega_2^2\omega_6 + 6\omega_8\omega_2^2 + 12\omega_8\omega_6 + 36c_s^2\omega_8^2\omega_6$

$C_{20} = -c_s^2\omega_8\omega_2^3\omega_6 + 6c_s^2\omega_8\omega_2^2 - 12c_s^2\omega_8\omega_6 + 3v_3^2\omega_8\omega_2^3 - 6\omega_2^3\omega_6 + c_s^2\omega_8\omega_2^3 - 3v_3^2\omega_8\omega_2^2\omega_6 + 18v_3^2\omega_8\omega_2^2 + 36v_3^2\omega_2\omega_6 - 36v_3^2\omega_8\omega_2 - 18v_3^2\omega_2^3 - 5c_s^2\omega_8\omega_2^2\omega_6 - 12c_s^2\omega_8\omega_2 + 36v_3^2\omega_2^2 + 18\omega_2^2\omega_6 + 12c_s^2\omega_2\omega_6 - 12\omega_2^2 + 12\omega_8\omega_2 - 18c_s^2\omega_2^2\omega_6 - 12\omega_2\omega_6 + \omega_8\omega_2^2\omega_6 - 54v_3^2\omega_2^2\omega_6 + 6\omega_2^3 + 18c_s^2\omega_8\omega_2\omega_6 + 6c_s^2\omega_2^2\omega_6 - 6c_s^2\omega_2^3 - \omega_8\omega_2^3 + 12c_s^2\omega_2^2 - 6\omega_8\omega_2^2 + 18v_3^2\omega_2^3\omega_6$

$C_{21} = 24c_s^2\omega_8\omega_2^2 + 30v_3^2\omega_8\omega_2^3 + 108v_3^2c_s^2\omega_2^3 - 36v_3^2c_s^2\omega_8^2\omega_2 - 6c_s^2\omega_8\omega_2^3 + 24c_s^4\omega_8\omega_2 - 72v_3^2\omega_8\omega_2^2 - 216v_3^2c_s^2\omega_2^2 - 24c_s^4\omega_8\omega_2^2 - 30v_3^4\omega_8\omega_2^3 - 36v_3^2\omega_2^3 - 12v_3^2c_s^2\omega_8^2\omega_2^2 + 6c_s^4\omega_8\omega_2^3 - 24c_s^2\omega_8\omega_2 + 72v_3^2\omega_2^2 + 72v_3^4\omega_8\omega_2^2 + 6v_3^2c_s^2\omega_8^2\omega_2^3 - 3c_s^4\omega_8^2\omega_2^3 + 12c_s^2\omega_8^2\omega_2 - 72v_3^2c_s^2\omega_8\omega_2^2 - 12v_3^4\omega_8^2\omega_2^2 + 24c_s^4\omega_8^2\omega_2^2 + 144v_3^2c_s^2\omega_8\omega_2^2 + 3v_3^4\omega_8^2\omega_2^3 + 72v_3^2c_s^2\omega_8\omega_2 + c_s^2\omega_8^2\omega_2^3 - 48c_s^4\omega_8^2\omega_2 - 72v_3^4\omega_2^2 + 12v_3^2\omega_8^2\omega_2^2 - 8c_s^2\omega_8^2\omega_2^2 + 36v_3^4\omega_2^3 - 3v_3^2\omega_8^2\omega_2^3 + 24c_s^4\omega_8^2$

2.6.4 Conservation of momentum: ρv_2

$$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{v_2v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_1} + (v_2^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2v_2\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_3} + \frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\omega_1\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\omega_1\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} +$$

$$(-2-2c_s^2\omega_5+\omega_5-3v_2^2\omega_5+6v_2^2+4c_s^2)\frac{\delta_l^2}{\omega_5\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + (2-\omega_5)\frac{3v_2\rho\delta_l^2}{\omega_5\delta_t}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-2+\omega_3)\frac{c_s^2\delta_l^2}{2\omega_3\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} +$$

$$
\begin{aligned}
&(-2+\omega_3)\frac{c_s^2\delta_l^2}{2\omega_3\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\rho\delta_l^2}{2\omega_1\delta_t}\frac{\partial^2 v_2}{\partial x_1^2} + (-2+\omega_1)\frac{c_s^2\rho\delta_l^2}{2\omega_1\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_2} + \\
&(-2-3c_s^2\omega_5+\omega_5-v_2^2\omega_5+2v_2^2+6c_s^2)\frac{v_2\delta_l^2}{2\omega_5\delta_t}\frac{\partial^2\rho}{\partial x_2^2} + (-2-c_s^2\omega_5+\omega_5-3v_2^2\omega_5+6v_2^2+2c_s^2)\frac{\rho\delta_l^2}{2\omega_5\delta_t}\frac{\partial^2 v_2}{\partial x_2^2} + \\
&(-2+\omega_3)\frac{c_s^2\rho\delta_l^2}{2\omega_3\delta_t}\frac{\partial^2 v_3}{\partial x_2\partial x_3} + (-2+\omega_3)\frac{c_s^2\rho\delta_l^2}{2\omega_3\delta_t}\frac{\partial^2 v_2}{\partial x_3^2} + (-1+v_1^2+3c_s^2)\frac{v_2v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+3v_1^2+c_s^2)\frac{v_2\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + \\
&C_1\frac{v_1\rho\delta_l^3}{6\omega_1\omega_9\delta_t}\frac{\partial^3 v_2}{\partial x_1^3} + (-12+12\omega_1-\omega_1^2)\frac{c_s^4\delta_l^3}{6\omega_1^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} - \frac{v_2c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + C_2\frac{v_2\rho\delta_l^3}{12\omega_7\omega_1\omega_5^2\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_3\frac{\delta_l^3}{12\omega_5^2\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + \\
&(-24+5c_s^2\omega_5^2-36c_s^2\omega_5-4\omega_5^2+24\omega_5-60v_2^2\omega_5+60v_2^2+36c_s^2+11v_2^2\omega_5^2)\frac{v_2\rho\delta_l^3}{6\omega_5^2\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} - \frac{v_2c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + \\
&C_4\frac{v_2\rho\delta_l^3}{12\omega_{11}\omega_5^2\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{v_2c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + (-12-\omega_3^2+12\omega_3)\frac{c_s^4\delta_l^3}{6\omega_3^2\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} - \frac{v_2c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + \\
&(-1+v_3^2+3c_s^2)\frac{v_3v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_5\frac{v_3\rho\delta_l^3}{6\omega_3\delta_t\omega_{10}}\frac{\partial^3 v_2}{\partial x_3^3} + (-1+3v_3^2+c_s^2)\frac{v_2\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + \\
&(2c_s^4+3v_1^2\omega_4+24v_1^2c_s^2+6v_1^4-\omega_4c_s^4-12v_1^2\omega_4c_s^2+\omega_4c_s^2-6v_1^2-2c_s^2-3v_1^4\omega_4)\frac{v_2\delta_l^4}{24\omega_4\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + \\
&(-4+2\omega_4-5v_1^2\omega_4-3\omega_4c_s^2+10v_1^2+6c_s^2)\frac{v_2v_1\rho\delta_l^4}{12\omega_4\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_6\frac{\rho\delta_l^4}{24\omega_1^3\omega_9^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^4} + C_7\frac{v_1c_s^2\delta_l^4}{12\omega_4\omega_1^2\omega_9^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + \\
&C_8\frac{c_s^2\rho\delta_l^4}{12\omega_4\omega_1^3\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + (3\omega_4+v_1^2\omega_9+3\omega_4c_s^2\omega_9-3v_1^2\omega_4-9\omega_4c_s^2-\omega_9+3c_s^2\omega_9-\omega_4\omega_9+v_1^2\omega_4\omega_9)\frac{v_2v_1\rho\delta_l^4}{12\omega_4\omega_9\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + \\
&C_9\frac{v_2c_s^2\delta_l^4}{12\omega_7^2\omega_1^2\omega_5^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{10}\frac{c_s^2\rho\delta_l^4}{12\omega_7\omega_1^3\omega_5^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{11}\frac{\rho\delta_l^4}{12\omega_7^2\omega_1^3\omega_5^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{12}\frac{v_2\delta_l^4}{12\omega_5^3\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C_{13}\frac{\rho\delta_l^4}{12\omega_5^3\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + \\
&(3\omega_4c_s^2\omega_{12}+v_1^2\omega_{12}+3\omega_4-3v_1^2\omega_4-9\omega_4c_s^2-\omega_{12}+v_1^2\omega_4\omega_{12}-\omega_4\omega_{12}+3c_s^2\omega_{12})\frac{v_2v_1\rho\delta_l^4}{12\omega_4\omega_{12}\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C_{14}\frac{c_s^4\rho\delta_l^4}{12\omega_{13}\omega_1^3\omega_2\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{15}\frac{\rho\delta_l^4}{12\omega_{11}^2\omega_5^3\omega_3^3\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + (-2+\omega_2)\frac{v_2c_s^4\delta_l^4}{6\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + \\
&(-\omega_1^2\omega_3^2-\omega_3^2+\omega_{13}\omega_3+2\omega_1^2\omega_3-2\omega_1\omega_3+\omega_{13}\omega_1-\omega_{13}\omega_1\omega_3-\omega_1^2+2\omega_1\omega_3^2)\frac{c_s^4\rho\delta_l^4}{\omega_{13}\omega_1^2\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2} + \\
&C_{16}\frac{c_s^4\rho\delta_l^4}{12\omega_{13}\omega_1^2\omega_2\omega_3^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{17}\frac{v_2c_s^2\delta_l^4}{12\omega_{11}^2\omega_5^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{18}\frac{c_s^2\rho\delta_l^4}{12\omega_{11}\omega_5^2\omega_3^3\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + \\
&(3c_s^2\omega_8\omega_6+3c_s^2\omega_8+v_3^2\omega_8\omega_6-\omega_8-3v_3^2\omega_6+v_3^2\omega_8+3\omega_6-9c_s^2\omega_6-\omega_8\omega_6)\frac{v_3v_2\rho\delta_l^4}{12\omega_8\omega_6\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{19}\frac{v_3c_s^2\delta_l^4}{12\omega_6\omega_3^2\delta_t\omega_{10}^2}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} \\
&+ (3c_s^2\omega_6\omega_{10}+v_3^2\omega_6\omega_{10}+3c_s^2\omega_{10}-3v_3^2\omega_6+3\omega_6-9c_s^2\omega_6-\omega_6\omega_{10}-\omega_{10}+v_3^2\omega_{10})\frac{v_3v_2\rho\delta_l^4}{12\omega_6\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&C_{20}\frac{c_s^2\rho\delta_l^4}{12\omega_6\omega_3^3\delta_t\omega_{10}}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + (2c_s^4+24v_3^2c_s^2-12v_3^2c_s^2\omega_6-c_s^4\omega_6+6v_3^4+3v_3^2\omega_6-6v_3^2-2c_s^2-3v_3^4\omega_6+c_s^2\omega_6)\frac{v_2\delta_l^4}{24\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_3^4} \\
&+ C_{21}\frac{\rho\delta_l^4}{24\omega_3^3\delta_t\omega_{10}^2}\frac{\partial^4 v_2}{\partial x_3^4} + (-4-5v_3^2\omega_6+10v_3^2+2\omega_6+6c_s^2-3c_s^2\omega_6)\frac{v_3v_2\rho\delta_l^4}{12\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$
C_1 = 6+3v_1^2\omega_1+3v_1^2\omega_9-3\omega_1-v_1^2\omega_1\omega_9+\omega_1\omega_9-3c_s^2\omega_1\omega_9-3\omega_9-6v_1^2+9c_s^2\omega_9-18c_s^2+9c_s^2\omega_1
$$

$$
\begin{aligned}
C_2 = {} & -3\omega_7v_2^2\omega_1\omega_5^2-36c_s^2\omega_1\omega_5-36c_s^2\omega_5^2+12\omega_7v_2^2\omega_1+18\omega_7c_s^2\omega_5^2+12\omega_5^2+36c_s^2\omega_1\omega_5^2-6\omega_7v_2^2\omega_1\omega_5-6\omega_7\omega_5^2-12\omega_1\omega_5^2+6\omega_7v_2^2\omega_5^2+ \\
& 6\omega_7\omega_1\omega_5+36\omega_7c_s^2\omega_1-12v_2^2\omega_1\omega_5-12\omega_7\omega_1-11\omega_7c_s^2\omega_1\omega_5^2-18\omega_7c_s^2\omega_1\omega_5+12v_2^2\omega_1\omega_5^2-12v_2^2\omega_5^2+3\omega_7\omega_1\omega_5^2+12\omega_1\omega_5
\end{aligned}
$$

$$
C_3 = 12c_s^4-144v_2^2c_s^2\omega_5-36v_2^4\omega_5-c_s^2\omega_5^2+7v_2^4\omega_5^2+12c_s^2\omega_5+24v_2^2c_s^2\omega_5^2+144v_2^2c_s^2+36v_2^4+36v_2^2\omega_5+c_s^4\omega_5^2-36v_2^2-12c_s^2-7v_2^2\omega_5^2-12c_s^4\omega_5
$$

$$
\begin{aligned}
C_4 = {} & -36c_s^2\omega_5\omega_3-6v_2^2\omega_{11}\omega_5\omega_3-12\omega_5^2\omega_3+12v_2^2\omega_{11}\omega_3+6v_2^2\omega_{11}\omega_5^2-36c_s^2\omega_5^2+12v_2^2\omega_5^2\omega_3+3\omega_{11}\omega_5^2\omega_3+12\omega_5^2-12\omega_{11}\omega_3-6\omega_{11}\omega_5^2- \\
& 18c_s^2\omega_{11}\omega_5\omega_3+36c_s^2\omega_{11}\omega_3+18c_s^2\omega_{11}\omega_5^2-11c_s^2\omega_{11}\omega_5^2\omega_3-12v_2^2\omega_5\omega_3+6\omega_{11}\omega_5\omega_3-12v_2^2\omega_5^2+12\omega_5\omega_3-3v_2^2\omega_{11}\omega_5^2\omega_3+36c_s^2\omega_5^2\omega_3
\end{aligned}
$$

$$
C_5 = 6+9c_s^2\omega_3+\omega_3\omega_{10}+9c_s^2\omega_{10}-6v_3^2-v_3^2\omega_3\omega_{10}+3v_3^2\omega_3-3c_s^2\omega_3\omega_{10}-18c_s^2-3\omega_3-3\omega_{10}+3v_3^2\omega_{10}
$$

$$
\begin{aligned}
C_6 = {} & -8c_s^2\omega_1^2\omega_9^2+24c_s^4\omega_9^2-3c_s^4\omega_1^3\omega_9^2+6v_1^2c_s^2\omega_1^3\omega_9^2-6c_s^2\omega_1^3\omega_9+144v_1^2c_s^2\omega_1^2\omega_9-24c_s^4\omega_1^2\omega_9-12v_1^2c_s^2\omega_1^2\omega_9^2+24c_s^4\omega_1^2\omega_9^2-36v_1^2\omega_1^3+c_s^2\omega_1^3\omega_9^2+ \\
& 6c_s^4\omega_1^3\omega_9+72v_1^2\omega_1^2-72v_1^2c_s^2\omega_1^3\omega_9+24c_s^2\omega_1^2\omega_9+108v_1^2c_s^2\omega_1^3-12v_1^4\omega_1^2\omega_9^2-3v_1^2\omega_1^3\omega_9^2-24c_s^2\omega_1\omega_9-216v_1^2c_s^2\omega_1^2-30v_1^4\omega_1^3\omega_9-36v_1^2c_s^2\omega_1\omega_9^2- \\
& 48c_s^4\omega_1\omega_9^2-72v_1^2\omega_1^2\omega_9-72v_1^4\omega_1^2+12v_1^2\omega_1^2\omega_9^2+72v_1^2c_s^2\omega_1\omega_9+3v_1^4\omega_1^3\omega_9^2+24c_s^4\omega_1\omega_9+30v_1^2\omega_1^3\omega_9+12c_s^2\omega_1\omega_9^2+36v_1^4\omega_1^3+72v_1^4\omega_1^2\omega_9
\end{aligned}
$$

$$
\begin{aligned}
C_7 = {} & -6\omega_1\omega_9^2-36\omega_4c_s^2\omega_1+3c_s^2\omega_1^2\omega_9^2-\omega_4\omega_1^2\omega_9^2-36\omega_4c_s^2\omega_1\omega_9^2-3v_1^2\omega_4\omega_1^2\omega_9+6v_1^2\omega_1\omega_9^2-36\omega_4c_s^2\omega_9+36\omega_4c_s^2\omega_9^2-12v_1^2\omega_9^2+v_1^2\omega_4\omega_1^2\omega_9^2+ \\
& 12v_1^2\omega_1\omega_9+3\omega_4\omega_1^2\omega_9+54\omega_4c_s^2\omega_1\omega_9+18\omega_4c_s^2\omega_1^2-12\omega_1\omega_9-18c_s^2\omega_1^2\omega_9-18\omega_4\omega_1\omega_9-9\omega_4c_s^2\omega_1^2\omega_9-6\omega_4\omega_1^2+36c_s^2\omega_1\omega_9+12v_1^2\omega_4\omega_9^2+ \\
& 6\omega_1^2\omega_9+6v_1^2\omega_4\omega_1^2-36c_s^2\omega_9^2-6v_1^2\omega_1^2\omega_9-12\omega_4\omega_9^2-12v_1^2\omega_4\omega_1\omega_9^2+v_1^2\omega_1^2\omega_9^2+18v_1^2\omega_4\omega_1\omega_9+12\omega_4\omega_9+12\omega_9^2-12v_1^2\omega_4\omega_1-12v_1^2\omega_4\omega_9+ \\
& 18c_s^2\omega_1\omega_9^2-\omega_1^2\omega_9^2+12\omega_4\omega_1\omega_9^2+3\omega_4c_s^2\omega_1^2\omega_9^2+12\omega_4\omega_1
\end{aligned}
$$

$$
\begin{aligned}
C_8 = {} & 12\omega_4c_s^2\omega_1+c_s^2\omega_1^3\omega_9-3v_1^2\omega_4\omega_1^2\omega_9-12\omega_4c_s^2\omega_9-18v_1^2\omega_1^3+6\omega_4c_s^2\omega_1^3-36v_1^2\omega_1\omega_9+36v_1^2\omega_1^2+\omega_4\omega_1^2\omega_9+18\omega_4c_s^2\omega_1\omega_9-18\omega_4c_s^2\omega_1^2+ \\
& 12\omega_1\omega_9+6c_s^2\omega_1^2\omega_9+12c_s^2\omega_1^2+18v_1^2\omega_4\omega_1^3-5\omega_4c_s^2\omega_1^2\omega_9+18\omega_4\omega_1^2-12c_s^2\omega_1\omega_9-6\omega_1^2\omega_9-6\omega_4\omega_1^3-54v_1^2\omega_4\omega_1^2-6c_s^2\omega_1^3+18v_1^2\omega_1^2\omega_9-\omega_1^3\omega_9+ \\
& 6\omega_1^3-\omega_4c_s^2\omega_1^3\omega_9+36v_1^2\omega_4\omega_1+3v_1^2\omega_1^3\omega_9-12\omega_1^2-12\omega_4\omega_1
\end{aligned}
$$

$$C_9 = -18\omega_7^2 v_2^2 \omega_1^2 \omega_5 - 6\omega_7 \omega_1^2 \omega_5^2 + 12\omega_7 v_2^2 \omega_1 \omega_5^2 - 40\omega_7^2 c_s^2 \omega_1 \omega_5^3 + 12\omega_7^2 \omega_1 \omega_5^3 + 12 v_2^2 \omega_1^2 \omega_5^3 + 36\omega_7^2 c_s^2 \omega_1^2 - 12\omega_7^2 \omega_1^2 - 6\omega_7^2 \omega_1 \omega_5^2 + 18\omega_7 v_2^2 \omega_1 \omega_5^3 + 6\omega_7 \omega_1^2 \omega_5^3 + 18\omega_7^2 c_s^2 \omega_1 \omega_5^2 - 12 v_2^2 \omega_1^2 \omega_5^2 - 12\omega_7^2 v_2^2 \omega_5^2 - 12\omega_1^2 \omega_5^3 - 36 c_s^2 \omega_1 \omega_5^3 + 12\omega_7 \omega_5^3 + 18\omega_7 c_s^2 \omega_1^2 \omega_5^2 + \omega_7^2 v_2^2 \omega_1^2 \omega_5^3 + 12\omega_1^2 \omega_5^2 + 12\omega_7^2 v_2^2 \omega_5^3 - 18\omega_7 c_s^2 \omega_1^2 \omega_5^3 + 4\omega_7^2 v_2^2 \omega_1^2 \omega_5^2 - 36\omega_7 c_s^2 \omega_5^3 - 36 c_s^2 \omega_1^2 \omega_5^2 + 6\omega_7^2 v_2^2 \omega_1 \omega_5^2 + 54\omega_7 c_s^2 \omega_1 \omega_5^3 + 12\omega_7^2 \omega_5^2 - 36\omega_7^2 c_s^2 \omega_5^2 - 12\omega_7 v_2^2 \omega_5^3 + 36 c_s^2 \omega_1^2 \omega_5^3 + 12\omega_1 \omega_5^3 - 54\omega_7^2 c_s^2 \omega_1^2 \omega_5 - 12\omega_7^2 \omega_5^3 + 36\omega_7^2 c_s^2 \omega_5^3 + 18\omega_7^2 \omega_1^2 \omega_5 - 12\omega_7^2 v_2^2 \omega_1 \omega_5^3 + 36\omega_7 c_s^2 \omega_1 \omega_5^2 + 12\omega_7^2 c_s^2 \omega_1^2 \omega_5^2 - 6\omega_7 v_2^2 \omega_1^2 \omega_5^3 - 18\omega_7 \omega_1 \omega_5^3 - 4\omega_7^2 \omega_1^2 \omega_5^2 - \omega_7^2 \omega_1^2 \omega_5^3 + 5\omega_7^2 c_s^2 \omega_1^2 \omega_5^3 - 12\omega_7 \omega_1 \omega_5^2 + 6\omega_7 v_2^2 \omega_1^2 \omega_5^2 - 12 v_2^2 \omega_1 \omega_5^3 + 12\omega_7^2 v_2^2 \omega_1^2$$

$$C_{10} = -\omega_7 c_s^2 \omega_1^3 \omega_5^2 - 24\omega_1^2 \omega_5 + 72 v_2^2 \omega_1^3 \omega_5 + 12\omega_7 c_s^2 \omega_1^2 \omega_5 - 72 v_2^2 \omega_1^2 \omega_5^2 - 36\omega_7 v_2^2 \omega_1^2 - 12\omega_1^3 \omega_5^2 + 72 v_2^2 \omega_1^2 \omega_5 + 24\omega_1^3 \omega_5 - 12\omega_7 c_s^2 \omega_5^2 - 4\omega_7 c_s^2 \omega_1^2 \omega_5^2 + 12 c_s^2 \omega_1 \omega_5^2 + 24\omega_1^2 \omega_5^2 + 36 v_2^2 \omega_1^3 \omega_5^2 + 36 v_2^2 \omega_1^3 - 36\omega_7 v_2^2 \omega_1 \omega_5 - 12\omega_7 \omega_1^2 \omega_5 - 12\omega_1 \omega_5^2 - 24 c_s^2 \omega_1^2 \omega_5^2 + 36\omega_7 v_2^2 \omega_1^2 \omega_5 + 12\omega_7 \omega_1 \omega_5 - 24 c_s^2 \omega_1^3 \omega_5 + 12 c_s^2 \omega_1^3 + 18\omega_7 c_s^2 \omega_1 \omega_5^2 + 12\omega_7 \omega_1^2 - 12\omega_1^3 - 12\omega_7 c_s^2 \omega_1 \omega_5 + 36 v_2^2 \omega_1 \omega_5^2 + 12 c_s^2 \omega_1^3 \omega_5^2 - 12\omega_7 c_s^2 \omega_1^2 + 24 c_s^2 \omega_1^2 \omega_5$$

$$C_{11} = -4\omega_7^2 v_2^2 \omega_1^3 \omega_5^3 - 108 v_2^2 c_s^2 \omega_1^2 \omega_5^3 + 36 v_2^4 \omega_1^3 \omega_5^3 + 6\omega_7 c_s^2 \omega_1^3 \omega_5^2 + 6\omega_7^2 c_s^2 \omega_1 \omega_5^3 - 12\omega_7^2 c_s^2 \omega_1^3 + 12\omega_7^2 c_s^4 \omega_5^3 - 90\omega_7^2 v_2^4 \omega_1^3 \omega_5 + 12\omega_7 c_s^4 \omega_1^2 \omega_5^2 - 6\omega_7^2 v_2^4 \omega_1^2 \omega_5^3 + 36 v_2^2 \omega_1^2 \omega_5^3 - 36 v_2^4 \omega_1^3 \omega_5^2 - 19\omega_7^2 v_2^2 \omega_1^3 \omega_5^2 - 6\omega_7 c_s^2 \omega_1^3 \omega_5^3 - 18\omega_7 c_s^4 \omega_1^2 \omega_5^3 - 36 v_2^2 \omega_1^3 \omega_5^3 + 4\omega_7^2 v_2^4 \omega_1^3 \omega_5^3 - 6\omega_7 c_s^4 \omega_1^3 \omega_5^2 - 24\omega_7^2 c_s^4 \omega_1 \omega_5^3 - 12\omega_7 c_s^2 \omega_1^2 \omega_5^2 - 36 v_2^4 \omega_1^2 \omega_5^3 + 6\omega_7^2 v_2^2 \omega_1^2 \omega_5^3 + 108 v_2^2 c_s^2 \omega_1^3 \omega_5^3 + 36\omega_7 v_2^2 c_s^2 \omega_1 \omega_5^3 + 90\omega_7^2 v_2^2 \omega_1^3 \omega_5 + 19\omega_7^2 v_2^4 \omega_1^3 \omega_5^2 + 36 v_2^2 \omega_1^3 \omega_5^2 + 6\omega_7 c_s^4 \omega_1^3 \omega_5^3 - 18\omega_7^2 v_2^2 c_s^2 \omega_1 \omega_5^3 + 72\omega_7^2 v_2^4 \omega_1^3 + 18\omega_7 c_s^2 \omega_1^2 \omega_5^3 - 108 v_2^2 c_s^2 \omega_1^3 \omega_5^2 - 36\omega_7 v_2^4 \omega_1^3 \omega_5 + 6\omega_7^2 c_s^4 \omega_1^2 \omega_5^2 + 36\omega_7 v_2^4 \omega_1^2 \omega_5^3 - 3\omega_7^2 v_2^2 c_s^2 \omega_1^2 \omega_5^3 - 306\omega_7^2 v_2^2 c_s^2 \omega_1^3 \omega_5 - 12\omega_7 c_s^2 \omega_1 \omega_5^3 + 36\omega_7 v_2^2 c_s^2 \omega_1^2 \omega_5^2 + 39\omega_7 v_2^2 \omega_1^3 \omega_5^3 - \omega_7^2 c_s^2 \omega_1^3 \omega_5^2 + 18\omega_7^2 v_2^2 c_s^2 \omega_1^2 \omega_5^2 + 13\omega_7^2 c_s^4 \omega_1^2 \omega_5^3 - 12\omega_7^2 c_s^4 \omega_1^3 \omega_5 + 12\omega_7^2 c_s^4 \omega_1^3 + 12\omega_7^2 c_s^2 \omega_1^2 \omega_5 - 72\omega_7 v_2^2 \omega_1^3 \omega_5^2 + 54\omega_7 v_2^2 c_s^2 \omega_1^2 \omega_5^3 + 252\omega_7^2 v_2^2 c_s^2 \omega_1^3 - 108\omega_7 v_2^2 c_s^2 \omega_1^3 \omega_5 - 6\omega_7^2 c_s^2 \omega_1^2 \omega_5^2 - 36\omega_7 v_2^2 \omega_1^2 \omega_5^3 + 36\omega_7 v_2^2 \omega_1^3 \omega_5 + 198\omega_7 v_2^2 c_s^2 \omega_1^3 \omega_5^2 + 12\omega_7^2 v_2^2 c_s^2 \omega_1^3 \omega_5^3 - 72\omega_7^2 v_2^2 \omega_1^3 - 36\omega_7^2 v_2^2 c_s^2 \omega_1^2 \omega_5 + 12\omega_7 c_s^4 \omega_1 \omega_5^3 - 39\omega_7 v_2^4 \omega_1^3 \omega_5^3 + \omega_7^2 c_s^4 \omega_1^3 \omega_5^2 - 99\omega_7 v_2^2 c_s^2 \omega_1^3 \omega_5^3 + 12\omega_7^2 c_s^2 \omega_1^3 \omega_5 - 5\omega_7^2 c_s^2 \omega_1^2 \omega_5^3 + 72\omega_7 v_2^4 \omega_1^3 \omega_5^2 - \omega_7^2 c_s^4 \omega_1^3 \omega_5^3 - 12\omega_7^2 c_s^4 \omega_1^2 \omega_5 + 60\omega_7^2 v_2^2 c_s^2 \omega_1^3 \omega_5^2$$

$$C_{12} = 12 + 6c_s^2 \omega_5^3 + 144 c_s^4 - 1008 v_2^2 c_s^2 \omega_5 - 216 v_2^4 \omega_5 - 78 c_s^2 \omega_5^2 + 90 v_2^4 \omega_5^2 - 34 v_2^2 c_s^2 \omega_5^3 + 198 c_s^2 \omega_5 + 8\omega_5^2 + 404 v_2^2 c_s^2 \omega_5^2 - 9 v_2^4 \omega_5^3 - 18\omega_5 - \omega_5^3 + 672 v_2^2 c_s^2 + 144 v_2^4 + 234 v_2^2 \omega_5 + 82 c_s^4 \omega_5^2 - 156 v_2^2 - 5 c_s^4 \omega_5^3 - 132 c_s^2 + 10 v_2^2 \omega_5^3 - 98 v_2^2 \omega_5^2 - 216 c_s^4 \omega_5$$

$$C_{13} = 12 + 2c_s^2 \omega_5^3 + 24 c_s^4 - 648 v_2^2 c_s^2 \omega_5 - 756 v_2^4 \omega_5 - 22 c_s^2 \omega_5^2 + 310 v_2^4 \omega_5^2 - 18 v_2^2 c_s^2 \omega_5^3 + 54 c_s^2 \omega_5 + 8\omega_5^2 + 252 v_2^2 c_s^2 \omega_5^2 - 29 v_2^4 \omega_5^3 - 18\omega_5 - \omega_5^3 + 432 v_2^2 c_s^2 + 504 v_2^4 + 378 v_2^2 \omega_5 + 14 c_s^4 \omega_5^2 - 252 v_2^2 - c_s^4 \omega_5^3 - 36 c_s^2 + 14 v_2^2 \omega_5^3 - 154 v_2^2 \omega_5^2 - 36 c_s^4 \omega_5$$

$$C_{14} = -24\omega_{13}\omega_2\omega_3^2 - 6\omega_{13}\omega_1^3\omega_3 - 12\omega_1^2\omega_3^2 - 12\omega_1^2\omega_2\omega_3 - 2\omega_{13}\omega_1^2\omega_2\omega_3^2 - 12\omega_1^3\omega_3 - 6\omega_{13}\omega_1^2\omega_3^2 + 12\omega_1^3\omega_3^2 - 6\omega_{13}\omega_1^2\omega_2\omega_3 - 2\omega_{13}\omega_1^3\omega_3^2 + 12\omega_1^2\omega_2\omega_3^2 - 12\omega_1^3\omega_2 - \omega_{13}\omega_1^3\omega_2\omega_3^2 + 12\omega_{13}\omega_1\omega_2\omega_3 + 24\omega_1^3\omega_2\omega_3 + 12\omega_{13}\omega_1^3 + 12\omega_{13}\omega_1\omega_3^2 - 12\omega_1^3\omega_2\omega_3^2 + 24\omega_{13}\omega_1\omega_2\omega_3^2$$

$$C_{15} = 12 c_s^4 \omega_{11}^2 \omega_5^3 - c_s^2 \omega_{11}^2 \omega_5^2 \omega_3^3 - 90 v_2^4 \omega_{11}^2 \omega_5 \omega_3^3 + 6 c_s^2 \omega_{11}^2 \omega_5^3 \omega_3 + 36 v_2^4 \omega_5^3 \omega_3^3 - 108 v_2^2 c_s^2 \omega_5^2 \omega_3^3 + 12 v_2^2 c_s^2 \omega_{11}^2 \omega_5^3 \omega_3^3 + 36 v_2^2 \omega_5^2 \omega_3^3 + 6 v_2^2 \omega_{11}^2 \omega_5^3 \omega_3^2 + 6 c_s^4 \omega_{11} \omega_5^3 \omega_3^3 - 36 v_2^4 \omega_5^3 \omega_3^2 - 3 v_2^2 c_s^2 \omega_{11}^2 \omega_5^3 \omega_3^2 + 72 v_2^4 \omega_{11} \omega_5^2 \omega_3^3 - 6 c_s^2 \omega_{11}^2 \omega_5^2 \omega_3^3 - 18 c_s^4 \omega_{11} \omega_5^3 \omega_3^2 - 4 v_2^2 \omega_{11}^2 \omega_5^3 \omega_3^3 - 12 c_s^2 \omega_{11}^2 \omega_3^3 - 12 c_s^4 \omega_{11}^2 \omega_5 \omega_3^2 + 12 c_s^4 \omega_{11} \omega_5^3 \omega_3 + 36 v_2^2 \omega_{11} \omega_5 \omega_3^3 - 6 c_s^4 \omega_{11} \omega_5^2 \omega_3^2 - 36 v_2^2 \omega_5^3 \omega_3^3 + 60 v_2^2 c_s^2 \omega_{11}^2 \omega_5^2 \omega_3^3 + 108 v_2^2 c_s^2 \omega_5^3 \omega_3^3 - 36 v_2^4 \omega_5^2 \omega_3^3 - 18 v_2^2 c_s^2 \omega_{11}^2 \omega_5^3 \omega_3 + 36 v_2^4 \omega_{11} \omega_5^3 \omega_3^2 + 36 v_2^2 \omega_5^3 \omega_3^2 + 12 c_s^4 \omega_{11} \omega_5^2 \omega_3^2 - 12 c_s^4 \omega_{11}^2 \omega_5 \omega_3^3 - 19 v_2^2 \omega_{11}^2 \omega_5^2 \omega_3^3 - 39 v_2^4 \omega_{11} \omega_5^3 \omega_3^3 - 5 c_s^2 \omega_{11}^2 \omega_5^3 \omega_3^2 - 108 v_2^2 c_s^2 \omega_{11} \omega_5 \omega_3^3 + 18 v_2^2 c_s^2 \omega_{11}^2 \omega_5^2 \omega_3^2 + 12 c_s^4 \omega_{11}^2 \omega_{11}^3 - 108 v_2^2 c_s^2 \omega_5^3 \omega_3^2 + 90 v_2^2 \omega_{11}^2 \omega_5 \omega_3^3 + c_s^4 \omega_{11}^2 \omega_5^2 \omega_3^3 - 72 v_2^2 \omega_{11}^2 \omega_3^3 - 24 c_s^4 \omega_{11}^2 \omega_5^3 \omega_3 - 6 v_2^4 \omega_{11}^2 \omega_5^3 \omega_3^2 + 252 v_2^2 c_s^2 \omega_{11}^2 \omega_3^3 - 6 c_s^2 \omega_{11} \omega_5^3 \omega_3^3 + 36 v_2^2 c_s^2 \omega_{11} \omega_5^3 \omega_3 - 36 v_2^2 c_s^2 \omega_{11}^2 \omega_5 \omega_3^2 + 198 v_2^2 c_s^2 \omega_{11} \omega_5^2 \omega_3^3 - 72 v_2^2 \omega_{11} \omega_5^2 \omega_3^3 + 6 c_s^4 \omega_{11}^2 \omega_5^2 \omega_3^2 + 36 v_2^2 c_s^2 \omega_{11} \omega_5^2 \omega_3^2 - 306 v_2^2 c_s^2 \omega_{11}^2 \omega_5 \omega_3^3 + 18 c_s^2 \omega_{11} \omega_5^3 \omega_3^2 + 4 v_2^4 \omega_{11}^2 \omega_5^3 \omega_3^3 - 99 v_2^2 c_s^2 \omega_{11} \omega_5^3 \omega_3^3 - 12 c_s^2 \omega_{11} \omega_5^3 \omega_3 + 72 v_2^4 \omega_{11}^2 \omega_3^3 + 12 c_s^2 \omega_{11}^2 \omega_5 \omega_3^3 + 6 c_s^2 \omega_{11} \omega_5^2 \omega_3^3 - 36 v_2^4 \omega_{11} \omega_5 \omega_3^3 - c_s^4 \omega_{11}^2 \omega_5^3 \omega_3^3 - 36 v_2^2 \omega_{11} \omega_5^3 \omega_3^2 - 12 c_s^2 \omega_{11} \omega_5^2 \omega_3^2 + 19 v_2^4 \omega_{11}^2 \omega_5^2 \omega_3^3 + 12 c_s^2 \omega_{11}^2 \omega_5 \omega_3^3 + 54 v_2^2 c_s^2 \omega_{11} \omega_5^3 \omega_3^2 + 39 v_2^2 \omega_{11} \omega_5^3 \omega_3^3 + 13 c_s^4 \omega_{11}^2 \omega_5^3 \omega_3^2$$

$$C_{16} = 12\omega_{13}\omega_3^3 - \omega_{13}\omega_1^2\omega_2\omega_3^3 - 2\omega_{13}\omega_1^2\omega_3^3 - 12\omega_1^2\omega_3^2 - 12\omega_2\omega_3^3 - 2\omega_{13}\omega_1^2\omega_2\omega_3^2 + 12\omega_1^2\omega_3^3 - 6\omega_{13}\omega_1^2\omega_3^2 - 12\omega_1^2\omega_2\omega_3^3 + 12\omega_{13}\omega_1^2\omega_3 + 24\omega_{13}\omega_1^2\omega_2\omega_3 + 12\omega_1^2\omega_2\omega_3^2 + 24\omega_1\omega_2\omega_3^3 + 12\omega_{13}\omega_1\omega_2\omega_3 - 12\omega_1\omega_2\omega_3^2 - 12\omega_1\omega_3^3 - 6\omega_{13}\omega_1\omega_2\omega_3^2 - 24\omega_{13}\omega_1^2\omega_2 - 6\omega_{13}\omega_1\omega_3^3$$

$$C_{17} = -40 c_s^2 \omega_{11}^2 \omega_5^3 \omega_3 + 18\omega_{11}^2 \omega_5 \omega_3^2 - 18\omega_{11} \omega_5^3 \omega_3 - 12 v_2^2 \omega_5^3 \omega_3 - 12 v_2^2 \omega_{11} \omega_5^3 + 36 c_s^2 \omega_{11}^2 \omega_3^2 + v_2^2 \omega_{11}^2 \omega_5^3 \omega_3^2 - 6\omega_{11} \omega_5^2 \omega_3^2 + 12 c_s^2 \omega_{11}^2 \omega_5^2 \omega_3^2 + 6 v_2^2 \omega_{11}^2 \omega_5^2 \omega_3 - 12\omega_5^3 \omega_3^2 - 12 v_2^2 \omega_5^2 \omega_3^2 + 12\omega_{11} \omega_5^3 + 4 v_2^2 \omega_{11}^2 \omega_5^2 \omega_3^2 + 36 c_s^2 \omega_{11}^2 \omega_5^3 + 12\omega_5^3 \omega_3 - 12\omega_{11} \omega_5^2 \omega_3 + 18 c_s^2 \omega_{11}^2 \omega_5^2 \omega_3 + 12 v_2^2 \omega_5^3 \omega_3^2 - 36 c_s^2 \omega_{11}^2 \omega_5^2 - 12 v_2^2 \omega_{11}^2 \omega_5^3 \omega_3 + 12\omega_5^2 \omega_3^2 + 5 c_s^2 \omega_{11}^2 \omega_5^3 \omega_3^2 + 6\omega_{11} \omega_5^3 \omega_3^2 + 12\omega_{11}^2 \omega_5^2 - 36 c_s^2 \omega_5^2 \omega_3^2 + 6 v_2^2 \omega_{11} \omega_5^2 \omega_3^2 + 36 c_s^2 \omega_{11} \omega_5^2 \omega_3 - 6\omega_{11}^2 \omega_5^2 \omega_3 + 12 v_2^2 \omega_{11}^2 \omega_3^2 - 36 c_s^2 \omega_{11} \omega_5^3 - 36 c_s^2 \omega_5^3 \omega_3 - 18 v_2^2 \omega_{11}^2 \omega_5 \omega_3^2 + 18 v_2^2 \omega_{11} \omega_5^3 \omega_3 - 12\omega_{11}^2 \omega_5^3 - \omega_{11}^2 \omega_5^3 \omega_3^2 - 18 c_s^2 \omega_{11} \omega_5^3 \omega_3^2 + 12\omega_{11}^2 \omega_5^3 \omega_3 + 54 c_s^2 \omega_{11} \omega_5^3 \omega_3 - 54 c_s^2 \omega_{11}^2 \omega_5 \omega_3^2 - 6 v_2^2 \omega_{11} \omega_5^3 \omega_3^2 + 36 c_s^2 \omega_5^3 \omega_3^2 - 12 v_2^2 \omega_{11}^2 \omega_5^2 + 18 c_s^2 \omega_{11} \omega_5^2 \omega_3^2 - 4\omega_{11}^2 \omega_5^2 \omega_3^2 + 12 v_2^2 \omega_{11}^2 \omega_5^3 - 12\omega_{11}^2 \omega_3^2 + 12 v_2^2 \omega_{11} \omega_5^2 \omega_3$$

$$C_{18} = 12 c_s^2 \omega_{11} \omega_5 \omega_3^2 - 12\omega_3^3 + 12\omega_{11} \omega_3^2 + 36 v_2^2 \omega_5^2 \omega_3^3 - 36 v_2^2 \omega_{11} \omega_5 \omega_3 - 12\omega_5^2 \omega_3 - 72 v_2^2 \omega_5^2 \omega_3^2 - 12\omega_5^2 \omega_3^3 - 24 c_s^2 \omega_5 \omega_3^3 - 36 v_2^2 \omega_{11} \omega_3^2 + 36 v_2^2 \omega_5^2 \omega_3 + 36 v_2^2 \omega_{11} \omega_5 \omega_3^2 + 24 c_s^2 \omega_5 \omega_3^2 + 12 c_s^2 \omega_3^3 + 24\omega_5^2 \omega_3^2 - 12 c_s^2 \omega_{11} \omega_5 \omega_3 - 24\omega_5 \omega_3^2 - 24 c_s^2 \omega_5^2 \omega_3^2 - 12 c_s^2 \omega_{11} \omega_5^2 + 18 c_s^2 \omega_{11} \omega_5^2 \omega_3 + 12 c_s^2 \omega_5^2 \omega_3^3 + 24\omega_5 \omega_3^3 + 36 v_2^2 \omega_3^3 + 12\omega_{11} \omega_5 \omega_3 - 12\omega_{11} \omega_5 \omega_3^2 - c_s^2 \omega_{11} \omega_5^2 \omega_3^3 + 72 v_2^2 \omega_5 \omega_3^3 - 4 c_s^2 \omega_{11} \omega_5^2 \omega_3^2 - 12 c_s^2 \omega_{11} \omega_3^2 - 72 v_2^2 \omega_5 \omega_3^3 + 12 c_s^2 \omega_5^2 \omega_3$$

$$C_{19} = -36 c_s^2 \omega_6 \omega_{10} - 36 c_s^2 \omega_6 \omega_3 \omega_{10}^2 + 18 v_3^2 \omega_6 \omega_3 \omega_{10} - 36 c_s^2 \omega_{10}^2 + 6 v_3^2 \omega_6 \omega_3^2 + v_3^2 \omega_3^2 \omega_{10}^2 - 6\omega_3 \omega_{10}^2 + 3 c_s^2 \omega_3^2 \omega_{10}^2 + 18 c_s^2 \omega_6 \omega_3^2 - 12 v_3^2 \omega_6 \omega_{10} - \omega_6 \omega_3^2 \omega_{10}^2 + 3\omega_6 \omega_3^2 \omega_{10} + 12 v_3^2 \omega_6 \omega_{10}^2 - 12\omega_3 \omega_{10} - 18 c_s^2 \omega_3^2 \omega_{10} - 36 c_s^2 \omega_6 \omega_3 - 12 v_3^2 \omega_6 \omega_3 \omega_{10}^2 + 54 c_s^2 \omega_6 \omega_3 \omega_{10} - 12 v_3^2 \omega_6 \omega_3 - 6 v_3^2 \omega_3^2 \omega_{10} + 12\omega_{10}^2 + 36 c_s^2 \omega_6 \omega_{10}^2 + v_3^2 \omega_6 \omega_3^2 \omega_{10}^2 - 9 c_s^2 \omega_6 \omega_3^2 \omega_{10} + 12 v_3^2 \omega_3 \omega_{10} - 12 v_3^2 \omega_{10}^2 - 12\omega_6 \omega_{10}^2 - 18\omega_6 \omega_3 \omega_{10} + 36 c_s^2 \omega_3 \omega_{10} + 6\omega_3^2 \omega_{10} + 12\omega_6 \omega_3 + 18 c_s^2 \omega_3 \omega_{10}^2 - \omega_3^2 \omega_{10}^2 - 6\omega_6 \omega_3^2 + 12\omega_6 \omega_3 \omega_{10}^2 + 12\omega_6 \omega_{10} + 3 c_s^2 \omega_6 \omega_3^2 \omega_{10}^2 - 3 v_3^2 \omega_6 \omega_3^2 \omega_{10} + 6 v_3^2 \omega_3 \omega_{10}^2$$

$$C_{20} = 6 c_s^2 \omega_6 \omega_3^3 - 12 c_s^2 \omega_6 \omega_{10} + 6\omega_3^3 + c_s^2 \omega_3^3 \omega_{10} - 54 v_3^2 \omega_6 \omega_3^2 - 12\omega_3^2 - 18 c_s^2 \omega_6 \omega_3^2 + 3 v_3^2 \omega_3^3 \omega_{10} + 18 v_3^2 \omega_6 \omega_3^3 + \omega_6 \omega_3^2 \omega_{10} + 12 c_s^2 \omega_3^2 + 12\omega_3 \omega_{10} + 6 c_s^2 \omega_3^2 \omega_{10} + 12 c_s^2 \omega_6 \omega_3 + 18 c_s^2 \omega_6 \omega_3 \omega_{10} + 36 v_3^2 \omega_6 \omega_3 - 6 c_s^2 \omega_3^3 + 18 v_3^2 \omega_3^2 \omega_{10} - 5 c_s^2 \omega_6 \omega_3^2 \omega_{10} - 36 v_3^2 \omega_3 \omega_{10} - 12 c_s^2 \omega_3 \omega_{10} - 6\omega_3^2 \omega_{10} - 12\omega_6 \omega_3 + 18\omega_6 \omega_3^2 + 36 v_3^2 \omega_3^2 - c_s^2 \omega_6 \omega_3^3 \omega_{10} - 6\omega_6 \omega_3^3 - \omega_3^3 \omega_{10} - 3 v_3^2 \omega_6 \omega_3^2 \omega_{10} - 18 v_3^2 \omega_3^3$$

$$C_{21} =$$
$$3 v_3^4 \omega_3^3 \omega_{10}^2 + 72 v_3^2 c_s^2 \omega_3 \omega_{10} - 6 c_s^2 \omega_3^3 \omega_{10} - 24 c_s^4 \omega_3^2 \omega_{10} + 12 v_3^2 \omega_3^2 \omega_{10}^2 - 8 c_s^2 \omega_3^2 \omega_{10}^2 + 72 v_3^4 \omega_3^2 \omega_{10} + 30 v_3^2 \omega_3^3 \omega_{10} - 3 c_s^4 \omega_3^3 \omega_{10}^2 - 3 v_3^2 \omega_3^3 \omega_{10}^2 + 6 c_s^4 \omega_3^3 \omega_{10} + 24 c_s^2 \omega_3^2 \omega_{10} + 36 v_3^4 \omega_3^3 - 12 v_3^4 \omega_3^3 \omega_{10}^2 + 24 c_s^4 \omega_3^2 \omega_{10}^2 - 72 v_3^2 \omega_3^2 \omega_{10} - 30 v_3^4 \omega_3^3 \omega_{10} - 36 v_3^2 c_s^2 \omega_3 \omega_{10}^2 - 72 v_3^4 \omega_3^2 + c_s^2 \omega_3^3 \omega_{10}^2 - 48 c_s^4 \omega_3 \omega_{10}^2 - 12 v_3^2 c_s^2 \omega_3^2 \omega_{10}^2 - 216 v_3^2 c_s^2 \omega_3^2 + 24 c_s^4 \omega_{10}^2 + 108 v_3^2 c_s^2 \omega_3^3 - 24 c_s^2 \omega_3 \omega_{10} - 72 v_3^2 c_s^2 \omega_3^3 \omega_{10} + 12 c_s^2 \omega_3 \omega_{10}^2 + 6 v_3^2 c_s^2 \omega_3^3 \omega_{10}^2 + 72 v_3^2 \omega_3^2 + 144 v_3^2 c_s^2 \omega_3^2 \omega_{10} + 24 c_s^4 \omega_3 \omega_{10} - 36 v_3^2 \omega_3^3$$

2.6.5 Conservation of momentum: ρv_3

$$
\begin{aligned}
&v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{v_3 v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{v_3 v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_2} + (v_3^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \\
&\frac{2v_3\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_2)\frac{c_s^2\delta_l^2}{2\omega_2\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (-2+\omega_2)\frac{c_s^2\delta_l^2}{2\omega_2\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_3)\frac{c_s^2\delta_l^2}{2\omega_3\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2+\omega_3)\frac{c_s^2\delta_l^2}{2\omega_3\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3} \\
&+ (-2-3v_3^2\omega_6+6v_3^2+\omega_6+4c_s^2-2c_s^2\omega_6)\frac{\delta_l^2}{\omega_6\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + (2-\omega_6)\frac{3v_3\rho\delta_l^2}{\omega_6\delta_t}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_2)\frac{c_s^2\rho\delta_l^2}{2\omega_2\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} + \\
&(-2+\omega_3)\frac{c_s^2\rho\delta_l^2}{2\omega_3\delta_t}\frac{\partial^2 v_3}{\partial x_2^2} + (-2+\omega_2)\frac{c_s^2\rho\delta_l^2}{2\omega_2\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + (-2+\omega_3)\frac{c_s^2\rho\delta_l^2}{2\omega_3\delta_t}\frac{\partial^2 v_2}{\partial x_2\partial x_3} + \\
&(-2-v_3^2\omega_6+2v_3^2+\omega_6+6c_s^2-3c_s^2\omega_6)\frac{v_3\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2\rho}{\partial x_3^2} + (-2-3v_3^2\omega_6+6v_3^2+\omega_6+2c_s^2-c_s^2\omega_6)\frac{\rho\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_3^2} + \\
&(-1+v_1^2+3c_s^2)\frac{v_3 v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+3v_1^2+c_s^2)\frac{v_3\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_1\frac{v_1\rho\delta_l^3}{6\omega_2\omega_{12}\delta_t}\frac{\partial^3 v_3}{\partial x_1^3} - \frac{v_3 c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{v_3 c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + \\
&(-1+v_2^2+3c_s^2)\frac{v_3 v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-1+3v_2^2+c_s^2)\frac{v_3\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_2\frac{v_2\rho\delta_l^3}{6\omega_{11}\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_2^3} + (-12+12\omega_2-\omega_2^2)\frac{c_s^4\delta_l^3}{6\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} - \\
&\frac{v_3 c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + (-12-\omega_3^2+12\omega_3)\frac{c_s^4\delta_l^3}{6\omega_3^2\delta_t}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} - \frac{v_3 c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + C_3\frac{v_3\rho\delta_l^3}{12\omega_8\omega_2\omega_6^2\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C_4\frac{v_3\rho\delta_l^3}{12\omega_6^2\omega_3\delta_t\omega_{10}}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} \\
&+ C_5\frac{\delta_l^3}{12\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + (-24+11v_3^2\omega_6^2-60v_3^2\omega_6+60v_3^2+5c_s^2\omega_6^2+24\omega_6+36c_s^2-36c_s^2\omega_6-4\omega_6^2)\frac{v_3\rho\delta_l^3}{6\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + \\
&(2c_s^4+3v_1^2\omega_4+24v_1^2c_s^2+6v_1^4-\omega_4c_s^4-12v_1^2\omega_4c_s^2+\omega_4c_s^2-6v_1^2-2c_s^2-3v_1^4\omega_4)\frac{v_3\delta_l^4}{24\omega_4\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + \\
&(-4+2\omega_4-5v_1^2\omega_4-3\omega_4c_s^2+10v_1^2+6c_s^2)\frac{v_3 v_1\rho\delta_l^4}{12\omega_4\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_6\frac{\rho\delta_l^4}{24\omega_2^3\omega_{12}^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^4} + \\
&(3\omega_4+v_1^2\omega_9+3\omega_4c_s^2\omega_9-3v_1^2\omega_4-9\omega_4c_s^2-\omega_9+3c_s^2\omega_9-\omega_4\omega_9+v_1^2\omega_4\omega_9)\frac{v_3 v_1\rho\delta_l^4}{12\omega_4\omega_9\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + (-2+\omega_1)\frac{v_3 c_s^4\delta_l^4}{6\omega_1\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} \\
&+ (-\omega_3^2+2\omega_2\omega_3^2-2\omega_2\omega_3+\omega_{13}\omega_3-\omega_{13}\omega_2\omega_3-\omega_2^2+2\omega_2^2\omega_3-\omega_2^2\omega_3^2+\omega_{13}\omega_2)\frac{c_s^4\rho\delta_l^4}{\omega_{13}\omega_2^2\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} + \\
&(-\omega_7\omega_5-\omega_7+3\omega_7c_s^2\omega_5-9c_s^2\omega_5+3\omega_5+\omega_7v_2^2-3v_2^2\omega_5+3\omega_7c_s^2+\omega_7v_2^2\omega_5)\frac{v_3 v_2\rho\delta_l^4}{12\omega_7\omega_5\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + \\
&(2c_s^4-12v_2^2c_s^2\omega_5-3v_2^4\omega_5+c_s^2\omega_5+24v_2^2c_s^2+6v_2^4+3v_2^2\omega_5-6v_2^2-2c_s^2-c_s^4\omega_5)\frac{v_3\delta_l^4}{24\omega_5\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + \\
&(-4-3c_s^2\omega_5+2\omega_5-5v_2^2\omega_5+10v_2^2+6c_s^2)\frac{v_3 v_2\rho\delta_l^4}{12\omega_5\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C_7\frac{\rho\delta_l^4}{24\omega_{11}^2\omega_3^3\delta_t}\frac{\partial^4 v_3}{\partial x_2^4} + C_8\frac{v_1c_s^2\delta_l^4}{12\omega_4\omega_2^2\omega_{12}^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + \\
&C_9\frac{c_s^2\rho\delta_l^4}{12\omega_4\omega_2^3\omega_{12}\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + \\
&(3\omega_4c_s^2\omega_{12}+v_1^2\omega_{12}+3\omega_4-3v_1^2\omega_4-9\omega_4c_s^2-\omega_{12}+v_1^2\omega_4\omega_{12}-\omega_4\omega_{12}+3c_s^2\omega_{12})\frac{v_3 v_1\rho\delta_l^4}{12\omega_4\omega_{12}\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C_{10}\frac{c_s^4\rho\delta_l^4}{12\omega_{13}\omega_1\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C_{11}\frac{c_s^4\rho\delta_l^4}{12\omega_{13}\omega_1\omega_2^2\omega_3^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{12}\frac{v_2c_s^2\delta_l^4}{12\omega_{11}^2\omega_5\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{13}\frac{c_s^2\rho\delta_l^4}{12\omega_{11}\omega_5\omega_3^3\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + \\
&(3c_s^2\omega_{11}-\omega_{11}\omega_5-\omega_{11}-9c_s^2\omega_5+v_2^2\omega_{11}\omega_5+3\omega_5-3v_2^2\omega_5+v_2^2\omega_{11}+3c_s^2\omega_{11}\omega_5)\frac{v_3 v_2\rho\delta_l^4}{12\omega_{11}\omega_5\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + \\
&C_{14}\frac{v_3c_s^2\delta_l^4}{12\omega_8^2\omega_2^2\omega_6^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{15}\frac{c_s^2\rho\delta_l^4}{12\omega_8\omega_2^3\omega_6^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{16}\frac{v_3c_s^2\delta_l^4}{12\omega_6^3\omega_3^2\delta_t\omega_{10}^2}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{17}\frac{c_s^2\rho\delta_l^4}{12\omega_6^2\omega_3^3\delta_t\omega_{10}}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + \\
&C_{18}\frac{\rho\delta_l^4}{12\omega_8^2\omega_2^3\omega_6^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{19}\frac{\rho\delta_l^4}{12\omega_6^3\omega_3^3\delta_t\omega_{10}^2}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{20}\frac{v_3\delta_l^4}{12\omega_6^3\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{21}\frac{\rho\delta_l^4}{12\omega_6^3\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$C_1 = 6+3v_1^2\omega_{12}-3c_s^2\omega_2\omega_{12}+3v_1^2\omega_2-3\omega_2+\omega_2\omega_{12}+9c_s^2\omega_2-v_1^2\omega_2\omega_{12}-3\omega_{12}-6v_1^2-18c_s^2+9c_s^2\omega_{12}$$

$$C_2 = 6+9c_s^2\omega_{11}-v_2^2\omega_{11}\omega_3+9c_s^2\omega_3-3\omega_{11}+\omega_{11}\omega_3-3c_s^2\omega_{11}\omega_3-6v_2^2-18c_s^2-3\omega_3+3v_2^2\omega_{11}+3v_2^2\omega_3$$

$$C_3 = -12v_3^2\omega_6^2+3\omega_8\omega_2\omega_6^2+36c_s^2\omega_2\omega_6^2+12v_3^2\omega_2\omega_6^2+6v_3^2\omega_8\omega_6^2-12v_3^2\omega_2\omega_6+12v_3^2\omega_8\omega_2+36c_s^2\omega_8\omega_2+18c_s^2\omega_8\omega_6^2+6\omega_8\omega_2\omega_6-36c_s^2\omega_2\omega_6-12\omega_8\omega_2-6\omega_8\omega_6^2-36c_s^2\omega_6^2+12\omega_2\omega_6-3v_3^2\omega_8\omega_2\omega_6^2-18c_s^2\omega_8\omega_2\omega_6-11c_s^2\omega_8\omega_2\omega_6^2-6v_3^2\omega_8\omega_2\omega_6-12\omega_2\omega_6^2+12\omega_6^2$$

$$C_4 = -12v_3^2\omega_6^2-6\omega_6^2\omega_{10}-6v_3^2\omega_6\omega_3\omega_{10}-12\omega_3\omega_{10}-12\omega_6^2\omega_3-36c_s^2\omega_6\omega_3-18c_s^2\omega_6\omega_3\omega_{10}-12v_3^2\omega_6\omega_3+3\omega_6^2\omega_3\omega_{10}+12v_3^2\omega_6^2\omega_3+12v_3^2\omega_3\omega_{10}-36c_s^2\omega_6^2+6\omega_6\omega_3\omega_{10}-11c_s^2\omega_6^2\omega_3\omega_{10}+36c_s^2\omega_3\omega_{10}+36c_s^2\omega_6^2\omega_3+12\omega_6\omega_3+6v_3^2\omega_6^2\omega_{10}-3v_3^2\omega_6^2\omega_3\omega_{10}+18c_s^2\omega_6^2\omega_{10}+12\omega_6^2$$

$$C_5 = -7v_3^2\omega_6^2+12c_s^4+144v_3^2c_s^2-144v_3^2c_s^2\omega_6+c_s^4\omega_6^2+24v_3^2c_s^2\omega_6^2-12c_s^4\omega_6+36v_3^4+36v_3^2\omega_6-36v_3^2-c_s^2\omega_6^2+7v_3^4\omega_6^2-12c_s^2-36v_3^4\omega_6+12c_s^2\omega_6$$

$$C_6 = 72v_1^2\omega_2^2+72v_1^4\omega_2^2\omega_{12}+30v_1^2\omega_2^3\omega_{12}+12c_s^2\omega_2\omega_{12}^2+72v_1^2c_s^2\omega_2\omega_{12}+3v_1^4\omega_2^3\omega_{12}^2-36v_1^2\omega_2^3+24c_s^4\omega_2\omega_{12}+24c_s^4\omega_{12}^2+12v_1^2\omega_2^2\omega_{12}^2-72v_1^2\omega_2^2\omega_{12}-30v_1^4\omega_2^3\omega_{12}-36v_1^2c_s^2\omega_2\omega_{12}^2-48c_s^4\omega_2\omega_{12}^2-3v_1^2\omega_2^3\omega_{12}^2-24c_s^2\omega_2\omega_{12}-12v_1^4\omega_2^2\omega_{12}^2+36v_1^4\omega_2^3+24c_s^2\omega_2^2\omega_{12}+6c_s^4\omega_2^3\omega_{12}-72v_1^2c_s^2\omega_2^3\omega_{12}-72v_1^4\omega_2^2+c_s^2\omega_2^3\omega_{12}^2-12v_1^2c_s^2\omega_2^2\omega_{12}^2+24c_s^4\omega_2^2\omega_{12}^2+144v_1^2c_s^2\omega_2^2\omega_{12}-216v_1^2c_s^2\omega_2^2-24c_s^4\omega_2^2\omega_{12}-6c_s^2\omega_2^3\omega_{12}-3c_s^4\omega_2^3\omega_{12}^2+6v_1^2c_s^2\omega_2^3\omega_{12}^2+108v_1^2c_s^2\omega_2^3-8c_s^2\omega_2^2\omega_{12}^2$$

$C_7 = 72v_2^4\omega_{11}\omega_3^2 + 36v_2^4\omega_3^3 - 216v_2^2c_s^2\omega_3^2 - 8c_s^2\omega_{11}^2\omega_3^2 - 48c_s^4\omega_{11}^2\omega_3 + 72v_2^2c_s^2\omega_{11}\omega_3 - 30v_2^4\omega_{11}\omega_3^3 + c_s^2\omega_{11}^2\omega_3^3 + 108v_2^2c_s^2\omega_3^3 - 72v_2^4\omega_3^2 - 72v_2^2\omega_{11}\omega_3^2 + 24c_s^4\omega_{11}^2\omega_3^2 + 144v_2^2c_s^2\omega_{11}\omega_3^2 + 12c_s^2\omega_{11}^2\omega_3 + 30v_2^2\omega_{11}\omega_3^3 - 72v_2^2c_s^2\omega_{11}\omega_3^3 - 3c_s^4\omega_{11}^2\omega_3^3 - 24c_s^2\omega_{11}\omega_3 - 3v_2^2\omega_{11}^2\omega_3^3 + 6v_2^2c_s^2\omega_{11}^2\omega_3^3 + 6c_s^4\omega_{11}\omega_3^3 + 72v_2^2\omega_3^2 + 12v_2^2\omega_{11}^2\omega_3^2 - 36v_2^2\omega_3^3 - 24c_s^4\omega_{11}\omega_3^2 - 12v_2^2c_s^2\omega_{11}^2\omega_3^2 + 24c_s^4\omega_{11}\omega_3 + 3v_2^4\omega_{11}^2\omega_3^3 - 36v_2^2c_s^2\omega_{11}^2\omega_3 + 24c_s^4\omega_{11}^2 - 6c_s^2\omega_{11}\omega_3^3 - 12v_2^4\omega_{11}^2\omega_3^2 + 24c_s^2\omega_{11}\omega_3^2$

$C_8 = 12\omega_4\omega_2\omega_{12}^2 - 36\omega_4c_s^2\omega_{12} + 3\omega_4c_s^2\omega_2^2\omega_{12}^2 + 18c_s^2\omega_2\omega_{12}^2 - \omega_2^2\omega_{12}^2 + 18\omega_4c_s^2\omega_2^2 + v_1^2\omega_2^2\omega_{12}^2 + 18v_1^2\omega_4\omega_2\omega_{12} - 6v_1^2\omega_2^2\omega_{12} - 12v_1^2\omega_4\omega_2\omega_{12}^2 + 36c_s^2\omega_2\omega_{12} - 36\omega_4c_s^2\omega_2 + 6\omega_2^2\omega_{12} - 12v_1^2\omega_{12}^2 - 18\omega_4\omega_2\omega_{12} + 36\omega_4c_s^2\omega_{12}^2 - 9\omega_4c_s^2\omega_2^2\omega_{12} - 12\omega_4\omega_{12}^2 - 12\omega_2\omega_{12} - 36c_s^2\omega_{12}^2 - 18c_s^2\omega_2^2\omega_{12} + 3\omega_4\omega_2^2\omega_{12} + 12\omega_4\omega_2 + 54\omega_4c_s^2\omega_2\omega_{12} + 12v_1^2\omega_4\omega_{12}^2 + v_1^2\omega_4\omega_2^2\omega_{12}^2 + 12v_1^2\omega_2\omega_{12} - 12v_1^2\omega_4\omega_2 + 6v_1^2\omega_4\omega_2^2 - 12v_1^2\omega_4\omega_{12} - 3v_1^2\omega_4\omega_2^2\omega_{12} + 6v_1^2\omega_2\omega_{12}^2 - \omega_4\omega_2^2\omega_{12}^2 - 6\omega_4\omega_2^2 + 12\omega_{12}^2 - 36\omega_4c_s^2\omega_2\omega_{12}^2 + 12\omega_4\omega_{12} - 6\omega_2\omega_{12}^2 + 3c_s^2\omega_2^2\omega_{12}^2$

$C_9 = -12\omega_4c_s^2\omega_{12} + 36v_1^2\omega_2^2 + 3v_1^2\omega_2^3\omega_{12} - 18\omega_4c_s^2\omega_2^2 - \omega_4c_s^2\omega_2^3\omega_{12} - 18v_1^2\omega_2^3 + 6\omega_4c_s^2\omega_2^3 - \omega_2^3\omega_{12} + 18v_1^2\omega_2^2\omega_{12} - 12c_s^2\omega_2\omega_{12} + 12\omega_4c_s^2\omega_2 - 6\omega_2^2\omega_{12} - 5\omega_4c_s^2\omega_2^2\omega_{12} - 12\omega_2^2 + 12\omega_2\omega_{12} + 6c_s^2\omega_2^2\omega_{12} + \omega_4\omega_2^2\omega_{12} - 12\omega_4\omega_2 + 18\omega_4c_s^2\omega_2\omega_{12} - 36v_1^2\omega_2\omega_{12} + 6\omega_2^3 + 36v_1^2\omega_4\omega_2 - 6\omega_4\omega_2^3 - 6c_s^2\omega_2^3 - 54v_1^2\omega_4\omega_2^2 + c_s^2\omega_2^3\omega_{12} - 3v_1^2\omega_4\omega_2^2\omega_{12} + 18v_1^2\omega_4\omega_2^3 + 12c_s^2\omega_2^2 + 18\omega_4\omega_2^2$

$C_{10} = -2\omega_{13}\omega_1\omega_2^2\omega_3^2 + 12\omega_{13}\omega_2\omega_3^2 - 12\omega_1\omega_2^3\omega_3^2 - 12\omega_1\omega_2^2\omega_3 + 12\omega_1\omega_2^2\omega_3^2 - \omega_{13}\omega_1\omega_2^3\omega_3^2 + 24\omega_1\omega_2^3\omega_3 - 12\omega_1\omega_3^3 - 6\omega_{13}\omega_1\omega_2^2\omega_3 + 12\omega_2^3\omega_3^2 + 12\omega_{13}\omega_1\omega_2\omega_3 - 2\omega_{13}\omega_2^3\omega_3^2 + 12\omega_{13}\omega_2^3 - 12\omega_2^2\omega_3^2 - 24\omega_{13}\omega_1\omega_3^2 - 6\omega_{13}\omega_2^3\omega_3 + 24\omega_{13}\omega_1\omega_2\omega_3^2 - 6\omega_{13}\omega_2^2\omega_3^2 - 12\omega_2^3\omega_3$

$C_{11} = 12\omega_{13}\omega_3^3 - 2\omega_{13}\omega_1\omega_2^2\omega_3^2 - 12\omega_2\omega_3^3 - \omega_{13}\omega_1\omega_2^2\omega_3^3 - 6\omega_{13}\omega_2\omega_3^3 + 12\omega_1\omega_2^2\omega_3^2 - 12\omega_1\omega_2^2\omega_3^3 + 24\omega_{13}\omega_1\omega_2^2\omega_3 - 24\omega_{13}\omega_1\omega_2^2 + 12\omega_{13}\omega_2^2\omega_3 + 24\omega_1\omega_2\omega_3^3 + 12\omega_{13}\omega_1\omega_2\omega_3 - 12\omega_1\omega_2\omega_3^2 - 12\omega_1\omega_3^3 - 12\omega_2^2\omega_3^2 - 2\omega_{13}\omega_2^2\omega_3^3 - 6\omega_{13}\omega_1\omega_2\omega_3^2 - 6\omega_{13}\omega_2^2\omega_3^2 + 12\omega_2^2\omega_3^3$

$C_{12} = -9c_s^2\omega_{11}\omega_5\omega_3^2 - \omega_{11}^2\omega_5\omega_3^2 + 12\omega_{11}^2 + 6\omega_{11}\omega_3^2 + 3c_s^2\omega_{11}^2\omega_3^2 - 36c_s^2\omega_5\omega_3 + 36c_s^2\omega_{11}^2\omega_5 + 18v_2^2\omega_{11}\omega_5\omega_3 + 12\omega_{11}\omega_5 + 12v_2^2\omega_{11}\omega_3 - 6v_2^2\omega_{11}\omega_3^2 - 12v_2^2\omega_{11}\omega_5 - 12\omega_{11}\omega_3 + 18c_s^2\omega_{11}^2\omega_3 - 3v_2^2\omega_{11}\omega_5\omega_3^2 + 18c_s^2\omega_5\omega_3^2 - 36c_s^2\omega_{11}^2 + 54c_s^2\omega_{11}\omega_5\omega_3 + 12\omega_{11}^2\omega_5\omega_3 + 36c_s^2\omega_{11}\omega_3 - 6\omega_{11}^2\omega_3 - 6\omega_5\omega_3^2 + v_2^2\omega_{11}^2\omega_3^2 + v_2^2\omega_{11}^2\omega_5\omega_3^2 + 12v_2^2\omega_{11}^2\omega_5 - 12v_2^2\omega_5\omega_3 - 12v_2^2\omega_{11}^2 - 18\omega_{11}\omega_5\omega_3 - 36c_s^2\omega_{11}^2\omega_5\omega_3 + 3\omega_{11}\omega_5\omega_3^2 + 3c_s^2\omega_{11}^2\omega_5\omega_3^2 + 6v_2^2\omega_{11}^2\omega_3 - 12v_2^2\omega_{11}^2\omega_5\omega_3 + 6v_2^2\omega_5\omega_3^2 - 18c_s^2\omega_{11}\omega_3^2 - \omega_{11}^2\omega_3^2 - 12\omega_{11}^2\omega_5 + 12\omega_5\omega_3 - 36c_s^2\omega_{11}\omega_5$

$C_{13} = -5c_s^2\omega_{11}\omega_5\omega_3^2 + 6\omega_3^3 - 6\omega_{11}\omega_3^2 + 12c_s^2\omega_5\omega_3 - 12\omega_3^2 - c_s^2\omega_{11}\omega_5\omega_3^3 - 36v_2^2\omega_{11}\omega_3 - \omega_{11}\omega_3^3 + 12c_s^2\omega_3^2 + 6c_s^2\omega_5\omega_3^3 + 18v_2^2\omega_{11}\omega_3^2 + 12\omega_{11}\omega_3 - 3v_2^2\omega_{11}\omega_5\omega_3^2 + 3v_2^2\omega_{11}\omega_3^3 - 18c_s^2\omega_5\omega_3^2 - 6c_s^2\omega_3^3 + 18c_s^2\omega_{11}\omega_5\omega_3 - 12c_s^2\omega_{11}\omega_3 + 18\omega_5\omega_3^2 + 36v_2^2\omega_3^2 - 6\omega_5\omega_3^3 + 36v_2^2\omega_5\omega_3 - 18v_2^2\omega_3^3 + \omega_{11}\omega_5\omega_3^2 - 54v_2^2\omega_5\omega_3^2 + c_s^2\omega_{11}\omega_3^3 + 6c_s^2\omega_{11}\omega_3^2 + 18v_2^2\omega_5\omega_3^3 - 12\omega_5\omega_3 - 12c_s^2\omega_{11}\omega_5$

$C_{14} = -12\omega_8^2\omega_2^2 + 18c_s^2\omega_8^2\omega_2\omega_6^2 - 18c_s^2\omega_8\omega_2^2\omega_6^3 - 12\omega_8\omega_2\omega_6^2 + 12\omega_2^2\omega_6^2 - \omega_8^2\omega_2^2\omega_6^3 - 12v_3^2\omega_2\omega_6^3 - 36c_s^2\omega_2\omega_6^3 - 4\omega_8^2\omega_2^2\omega_6^2 - 18\omega_8\omega_2\omega_6^3 - 12\omega_2^2\omega_6^3 + 18c_s^2\omega_8\omega_2^2\omega_6^2 - 40c_s^2\omega_8^2\omega_2\omega_6^3 + 18\omega_8^2\omega_2\omega_6 - 12\omega_8^2\omega_6^3 - 36c_s^2\omega_8\omega_6^3 + 6v_3^2\omega_8\omega_2^2\omega_6^2 - 12v_3^2\omega_8^2\omega_2\omega_6^3 - 12v_3^2\omega_8\omega_6^3 + 6v_3^2\omega_8^2\omega_2\omega_6^2 - 6v_3^2\omega_8\omega_2^2\omega_6^3 + 12v_3^2\omega_8^2\omega_6^3 + 18v_3^2\omega_8\omega_2\omega_6^3 - 54c_s^2\omega_8^2\omega_2^2\omega_6 + 4v_3^2\omega_8^2\omega_2^2\omega_6^2 - 36c_s^2\omega_8^2\omega_6^2 - 12v_3^2\omega_8^2\omega_6^2 + 36c_s^2\omega_8^2\omega_6^3 + 12\omega_8\omega_6^3 + v_3^2\omega_8^2\omega_2^2\omega_6^3 + 12v_3^2\omega_8\omega_2\omega_6^2 + 6\omega_8\omega_2^2\omega_6^3 + 12\omega_2\omega_6^3 - 6\omega_8^2\omega_2\omega_6^2 + 36c_s^2\omega_2^2\omega_6^3 + 5c_s^2\omega_8^2\omega_2^2\omega_6^3 + 36c_s^2\omega_8\omega_2\omega_6^2 - 12v_3^2\omega_2^2\omega_6^2 + 12v_3^2\omega_8^2\omega_2^2 + 36c_s^2\omega_8^2\omega_2^2 + 54c_s^2\omega_8\omega_2\omega_6^3 - 18v_3^2\omega_8^2\omega_2^2\omega_6 + 12c_s^2\omega_8^2\omega_2^2\omega_6^2 + 12\omega_8^2\omega_2\omega_6^3 - 36c_s^2\omega_2^2\omega_6^2 - 6\omega_8\omega_2^2\omega_6^2 + 12v_3^2\omega_2^2\omega_6^3$

$C_{15} = -12c_s^2\omega_8\omega_2^2 + 24\omega_2^2\omega_6^2 + 12c_s^2\omega_2\omega_6^2 + 24\omega_2^3\omega_6 - 4c_s^2\omega_8\omega_2^2\omega_6^2 + 36v_3^2\omega_8\omega_2^2\omega_6 + 36v_3^2\omega_2\omega_6^2 - 36v_3^2\omega_8\omega_2^2 - 12\omega_2^3\omega_6^2 + 36v_3^2\omega_2^3 + 12c_s^2\omega_8\omega_2^2\omega_6 - c_s^2\omega_8\omega_2^3\omega_6^2 - 12c_s^2\omega_8\omega_6^2 - 24\omega_2^2\omega_6 + 12\omega_8\omega_2\omega_6 + 36v_3^2\omega_2^3\omega_6^2 + 24c_s^2\omega_2^2\omega_6 - 12\omega_8\omega_2^2\omega_6 + 72v_3^2\omega_2^2\omega_6 - 12\omega_2^3 + 12c_s^2\omega_2^3\omega_6^2 - 12c_s^2\omega_8\omega_2\omega_6 - 24c_s^2\omega_2^3\omega_6 + 12c_s^2\omega_2^3 + 18c_s^2\omega_8\omega_2\omega_6^2 - 36v_3^2\omega_8\omega_2\omega_6 - 72v_3^2\omega_2^2\omega_6^2 + 12\omega_8\omega_2^2 - 24c_s^2\omega_2^2\omega_6^2 - 12\omega_2\omega_6^2 - 72v_3^2\omega_2^3\omega_6$

$C_{16} = 12\omega_6^3\omega_3 - 12v_3^2\omega_6^3\omega_3\omega_{10}^2 + 54c_s^2\omega_6^3\omega_3\omega_{10} - 6\omega_6^2\omega_3\omega_{10}^2 + 12v_3^2\omega_3^2\omega_{10}^2 - 12\omega_6^3\omega_{10}^2 + 36c_s^2\omega_3^2\omega_{10}^2 + 12\omega_6^2\omega_3^2 + 18\omega_6\omega_3^2\omega_{10}^2 + 6\omega_6^3\omega_3^2\omega_{10} + 6v_3^2\omega_6^2\omega_3^2\omega_{10} + 12c_s^2\omega_6^2\omega_3^2\omega_{10}^2 + 18c_s^2\omega_6^2\omega_3^2\omega_{10} + 4v_3^2\omega_6^2\omega_3^2\omega_{10}^2 - \omega_6^3\omega_3^2\omega_{10}^2 + 12\omega_6^3\omega_{10} - 12\omega_6^2\omega_3\omega_{10} - 40c_s^2\omega_6^3\omega_3\omega_{10}^2 + 18v_3^2\omega_6^3\omega_3\omega_{10} - 12\omega_6^3\omega_3^2 + 12\omega_6^2\omega_{10}^2 - 18v_3^2\omega_6\omega_3^2\omega_{10}^2 + 5c_s^2\omega_6^3\omega_3^2\omega_{10}^2 - 6v_3^2\omega_6^3\omega_3^2\omega_{10} - 12v_3^2\omega_6^3\omega_{10} - 6\omega_6^2\omega_3^2\omega_{10} + 36c_s^2\omega_6^3\omega_3^2 - 36c_s^2\omega_6^2\omega_{10}^2 - 12v_3^2\omega_6^2\omega_{10}^2 + 12v_3^2\omega_6^3\omega_3^2 + 12\omega_6^3\omega_3\omega_{10}^2 + 36c_s^2\omega_6^2\omega_3\omega_{10} + 6v_3^2\omega_6^2\omega_3\omega_{10}^2 - 36c_s^2\omega_6^3\omega_{10} - 12\omega_3^2\omega_{10}^2 + 36c_s^2\omega_6^3\omega_{10}^2 - 36c_s^2\omega_6^2\omega_3^2 - 12v_3^2\omega_6^3\omega_3 + 12v_3^2\omega_6^2\omega_3\omega_{10} + 18c_s^2\omega_6^2\omega_3\omega_{10}^2 - 18\omega_6^3\omega_3\omega_{10} - 36c_s^2\omega_6^3\omega_3 - 12v_3^2\omega_6^2\omega_3^2 - 54c_s^2\omega_6\omega_3^2\omega_{10}^2 - 4\omega_6^2\omega_3^2\omega_{10}^2 + v_3^2\omega_6^3\omega_3^2\omega_{10}^2 - 18c_s^2\omega_6^3\omega_3^2\omega_{10} + 12v_3^2\omega_6^3\omega_{10}^2$

$C_{17} = -24c_s^2\omega_6\omega_3^3 - 12\omega_6^2\omega_3^3 - 12\omega_3^3 - 36v_3^2\omega_6\omega_3\omega_{10} - c_s^2\omega_6^2\omega_3^3\omega_{10} + 72v_3^2\omega_6\omega_3^2 + 24\omega_6^2\omega_3^2 + 24c_s^2\omega_6\omega_3^2 - 72v_3^2\omega_6\omega_3^3 - 12\omega_6\omega_3^2\omega_{10} - 4c_s^2\omega_6^2\omega_3^2\omega_{10} - 12c_s^2\omega_3^2\omega_{10} - 12\omega_6^2\omega_3 - 12c_s^2\omega_6\omega_3\omega_{10} + 12c_s^2\omega_3^3 - 36v_3^2\omega_3^2\omega_{10} + 36v_3^2\omega_6^2\omega_3 + 12c_s^2\omega_6\omega_3^2\omega_{10} + 12\omega_6\omega_3\omega_{10} + 18c_s^2\omega_6^2\omega_3\omega_{10} + 12\omega_3^2\omega_{10} + 12c_s^2\omega_6^2\omega_3 - 24c_s^2\omega_6^2\omega_3^2 - 24\omega_6\omega_3^2 + 36v_3^2\omega_6^2\omega_3^3 + 24\omega_6\omega_3^3 + 12c_s^2\omega_6^2\omega_3^3 - 12c_s^2\omega_6^2\omega_{10} - 72v_3^2\omega_6^2\omega_3^2 + 36v_3^2\omega_6\omega_3^2\omega_{10} + 36v_3^2\omega_3^3$

$C_{18} = -72v_3^2\omega_8\omega_2^3\omega_6^2 - 108v_3^2c_s^2\omega_2^3\omega_6^2 + 18c_s^2\omega_8\omega_2^2\omega_6^3 - c_s^4\omega_8^2\omega_2^3\omega_6^3 + 198v_3^2c_s^2\omega_8\omega_3^3\omega_6^2 - 12c_s^4\omega_8^2\omega_2^2\omega_6 - 12c_s^2\omega_8\omega_2^2\omega_6^2 + 108v_3^2c_s^2\omega_2^3\omega_6^3 + 39v_3^2\omega_8\omega_2^3\omega_6^3 + 6c_s^2\omega_8^2\omega_2\omega_6^3 - 6v_3^4\omega_8^2\omega_2^2\omega_6^3 - 90v_3^4\omega_8^2\omega_2^3\omega_6 - 99v_3^2c_s^2\omega_8\omega_2^3\omega_6^3 + c_s^4\omega_8^2\omega_2^3\omega_6^2 + 36v_3^2c_s^2\omega_8\omega_2^2\omega_6^2 + 13c_s^4\omega_8^2\omega_2^2\omega_6^3 - 18v_3^2c_s^2\omega_8^2\omega_2\omega_6^3 - 12c_s^4\omega_8^2\omega_2^3\omega_6 + 19v_3^4\omega_8^2\omega_2^3\omega_6^2 - 6c_s^2\omega_8\omega_2^3\omega_6^3 + 12c_s^4\omega_8\omega_2\omega_6^3 + 4v_3^4\omega_8^2\omega_2^3\omega_6^3 - 108v_3^2c_s^2\omega_8\omega_2^3\omega_6 + 6c_s^4\omega_8^2\omega_2^2\omega_6^2 + 54v_3^2c_s^2\omega_8\omega_2^2\omega_6^3 + 36v_3^2\omega_8\omega_2^3\omega_6 + 6c_s^2\omega_8\omega_2^3\omega_6^2 - 108v_3^2c_s^2\omega_2^2\omega_6^3 - 36v_3^2\omega_8\omega_2^2\omega_6^3 + 252v_3^2c_s^2\omega_8^2\omega_2^3 + 36v_3^2\omega_2^3\omega_6^2 + 36v_3^2c_s^2\omega_8\omega_2\omega_6^3 + 72v_3^4\omega_8\omega_2^3\omega_6^2 + 12c_s^4\omega_8^2\omega_2^3 - 18c_s^4\omega_8\omega_2^2\omega_6^3 + 18v_3^2c_s^2\omega_8^2\omega_2^2\omega_6^2 + 12c_s^2\omega_8^2\omega_2^2\omega_6 - 3v_3^2c_s^2\omega_8^2\omega_2^2\omega_6^3 + 12c_s^4\omega_8\omega_2^2\omega_6^2 - 36v_3^2\omega_2^2\omega_6^3 - 24c_s^4\omega_8^2\omega_2\omega_6^3 - 39v_3^4\omega_8\omega_2^3\omega_6^3 - 306v_3^2c_s^2\omega_8^2\omega_2^3\omega_6 + 72v_3^4\omega_8^2\omega_2^3 + 6v_3^2\omega_8^2\omega_2^2\omega_6^3 - 36v_3^4\omega_2^2\omega_6^3 - c_s^2\omega_8^2\omega_2^3\omega_6^2 + 90v_3^2\omega_8^2\omega_2^3\omega_6 - 5c_s^2\omega_8^2\omega_2^2\omega_6^3 - 36v_3^4\omega_2^3\omega_6^2 - 19v_3^2\omega_8^2\omega_2^3\omega_6^2 + 12c_s^2\omega_8^2\omega_2^3\omega_6 - 12c_s^2\omega_8^2\omega_2^3 + 60v_3^2c_s^2\omega_8^2\omega_2^3\omega_6^2 + 6c_s^4\omega_8\omega_2^3\omega_6^3 - 4v_3^2\omega_8^2\omega_2^3\omega_6^3 + 36v_3^4\omega_2^3\omega_6^3 - 12c_s^2\omega_8\omega_2\omega_6^3 - 6c_s^2\omega_8^2\omega_2^2\omega_6^2 + 12c_s^4\omega_8^2\omega_6^3 - 72v_3^2\omega_8^2\omega_2^3 - 6c_s^4\omega_8\omega_2^3\omega_6^2 - 36v_3^4\omega_8\omega_2^3\omega_6 + 12v_3^2c_s^2\omega_8^2\omega_2^3\omega_6^3 + 36v_3^4\omega_8\omega_2^2\omega_6^3 - 36v_3^2c_s^2\omega_8^2\omega_2^2\omega_6 + 36v_3^2\omega_2^2\omega_6^3$

$C_{19} = 72v_3^4\omega_3^3\omega_{10}^2 - 18v_3^2c_s^2\omega_6^3\omega_3\omega_{10}^2 + 36v_3^4\omega_6^3\omega_3^2\omega_{10} + 13c_s^4\omega_6^3\omega_3^2\omega_{10}^2 + 60v_3^2c_s^2\omega_6^2\omega_3^3\omega_{10}^2 + 108v_3^2c_s^2\omega_6^3\omega_3^3 - 19v_3^2\omega_6^2\omega_3^3\omega_{10}^2 + 6c_s^2\omega_6^2\omega_3^3\omega_{10} - 12c_s^2\omega_6^3\omega_3\omega_{10} + 36v_3^2c_s^2\omega_6^2\omega_3^2\omega_{10} - 108v_3^2c_s^2\omega_6^3\omega_3^2 - 12c_s^4\omega_6\omega_3^3\omega_{10}^2 - 36v_3^4\omega_6\omega_3^3\omega_{10} + 4v_3^4\omega_6^3\omega_3^3\omega_{10}^2 + 6c_s^4\omega_6^3\omega_3^3\omega_{10} + 12c_s^4\omega_3^3\omega_{10}^2 - 6c_s^2\omega_6^2\omega_3^2\omega_{10}^2 - 72v_3^2\omega_3^3\omega_{10}^2 - 12c_s^2\omega_6^2\omega_3^2\omega_{10} - 108v_3^2c_s^2\omega_6^2\omega_3^3 + 18v_3^2c_s^2\omega_6^2\omega_3^2\omega_{10}^2 - 90v_3^4\omega_6\omega_3^3\omega_{10}^2 - c_s^4\omega_6^3\omega_3^3\omega_{10}^2 - 39v_3^4\omega_6^3\omega_3^3\omega_{10} - c_s^2\omega_6^2\omega_3^3\omega_{10}^2 - 72v_3^2\omega_6^2\omega_3^3\omega_{10} + 6c_s^2\omega_6^3\omega_3\omega_{10}^2 + 36v_3^2c_s^2\omega_6^3\omega_3\omega_{10} - 18c_s^4\omega_6^3\omega_3^2\omega_{10} - 6v_3^4\omega_6^3\omega_3^2\omega_{10}^2 + 198v_3^2c_s^2\omega_6^2\omega_3^3\omega_{10} - 12c_s^4\omega_6\omega_3^2\omega_{10}^2 - 12c_s^2\omega_3^3\omega_{10}^2 + 12c_s^4\omega_6^3\omega_{10}^2 - 36v_3^2\omega_6^3\omega_3^3 - 5c_s^2\omega_6^3\omega_3^2\omega_{10}^2 - 36v_3^2\omega_6^3\omega_3^2\omega_{10} + 12c_s^4\omega_6^3\omega_3\omega_{10} + 54v_3^2c_s^2\omega_6^3\omega_3^2\omega_{10} - 6c_s^4\omega_6^2\omega_3^3\omega_{10} + 19v_3^4\omega_6^2\omega_3^3\omega_{10}^2 - 36v_3^4\omega_6^2\omega_3^3 - 36v_3^2c_s^2\omega_6\omega_3^2\omega_{10}^2 - 6c_s^2\omega_6^3\omega_3^3\omega_{10} - 4v_3^2\omega_6^3\omega_3^3\omega_{10}^2 + 36v_3^2\omega_6^3\omega_3^2 + 36v_3^2\omega_6\omega_3^3\omega_{10} + 12c_s^2\omega_6\omega_3^3\omega_{10}^2 + 6c_s^4\omega_6^2\omega_3^2\omega_{10}^2 - 108v_3^2c_s^2\omega_6\omega_3^3\omega_{10} + 12v_3^2c_s^2\omega_6^3\omega_3^3\omega_{10}^2 + 36v_3^4\omega_6^3\omega_3^3 + 12c_s^4\omega_6^2\omega_3^2\omega_{10} + 306v_3^2c_s^2\omega_6\omega_3^3\omega_{10}^2 + 252v_3^2c_s^2\omega_3^3\omega_{10}^2 - 99v_3^2c_s^2\omega_6^3\omega_3^3\omega_{10} + 39v_3^2\omega_6^3\omega_3^3\omega_{10} + 36v_3^2\omega_6^2\omega_3^3 + 90v_3^2\omega_6\omega_3^3\omega_{10}^2 - 24c_s^4\omega_6^3\omega_3\omega_{10}^2 - 3v_3^2c_s^2\omega_6^3\omega_3^2\omega_{10}^2 + 72v_3^4\omega_6^2\omega_3^3\omega_{10} + c_s^4\omega_6^2\omega_3^3\omega_{10}^2 - 36v_3^4\omega_6^3\omega_3^2 + 12c_s^2\omega_6\omega_3^2\omega_{10}^2 + 6v_3^2\omega_6^3\omega_3^2\omega_{10}^2 + 18c_s^2\omega_6^3\omega_3^2\omega_{10}$

$C_{20} = 12 - 98v_3^2\omega_6^2 - 5c_s^4\omega_6^3 + 144c_s^4 + 10v_3^2\omega_6^3 + 672v_3^2c_s^2 - 1008v_3^2c_s^2\omega_6 + 82c_s^4\omega_6^2 + 404v_3^2c_s^2\omega_6^2 - 216c_s^4\omega_6 + 144v_3^4 - 34v_3^2c_s^2\omega_6^3 + 234v_3^2\omega_6 - 156v_3^2 - 9v_3^4\omega_6^3 - 78c_s^2\omega_6^2 + 90v_3^4\omega_6^2 + 6c_s^2\omega_6^3 - 18\omega_6 - 132c_s^2 - \omega_6^3 - 216v_3^4\omega_6 + 198c_s^2\omega_6 + 8\omega_6^2$

$C_{21} = 12 - 154v_3^2\omega_6^2 - c_s^4\omega_6^3 + 24c_s^4 + 14v_3^2\omega_6^3 + 432v_3^2c_s^2 - 648v_3^2c_s^2\omega_6 + 14c_s^4\omega_6^2 + 252v_3^2c_s^2\omega_6^2 - 36c_s^4\omega_6 + 504v_3^4 - 18v_3^2c_s^2\omega_6^3 + 378v_3^2\omega_6 - 252v_3^2 - 29v_3^4\omega_6^3 - 22c_s^2\omega_6^2 + 310v_3^4\omega_6^2 + 2c_s^2\omega_6^3 - 18\omega_6 - 36c_s^2 - \omega_6^3 - 756v_3^4\omega_6 + 54c_s^2\omega_6 + 8\omega_6^2$

2.7 CuLBM2

2.7.1 Definitions

Based on [2], collision operator $\boldsymbol{C}$:

$$\boldsymbol{C}(\boldsymbol{f}) = \mathbf{M}^{-1}\boldsymbol{G}^{-1}\left(\mathbf{N}^{-1}\mathbf{S}\mathbf{N}\left(\boldsymbol{\gamma}^{(eq)} - \boldsymbol{G}(\mathbf{M}\boldsymbol{f})\right)\right),$$

where

$$\mathbf{S} = \mathrm{diag}(0,0,0,0,\omega_1,\omega_1,\omega_1,\omega_1,\omega_1,\omega_2,\omega_3,\omega_3,\omega_3,\omega_4,\omega_4,\omega_4,\omega_5,\omega_6,\omega_6,\omega_7,\omega_8,\omega_8,\omega_8,\omega_9,\omega_9,\omega_9,\omega_{10}),$$

$\omega_1, \omega_2, \cdots, \omega_{10} \in (0,2)$ and matrix $\mathbf{N}$ defines combination of cumulants for the collision by

$$\mathbf{N} = \begin{pmatrix}
1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&1&-1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&1&0&-1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&1&1&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&1&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&1&1&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&1&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&1&-1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&-1&1&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&-1&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&-2&1&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&1&-2&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&1&1&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1
\end{pmatrix},$$

The nonlinear operator $\boldsymbol{G}$ is the same as in CuLBM1 in Section **??** and, again, the equilibrium cumulant vector $\boldsymbol{\gamma}^{(eq)}$ is defined by

$$\boldsymbol{\gamma}^{(eq)} = \left(\rho, 0, 0, 0, 0, 0, 0, 0, 0, 3\rho c_s^2, 0, 0, \cdots, 0\right)^T.$$

2.7.2 Conservation of mass: ρ

$$\frac{\partial\rho}{\partial t} + \frac{v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-1+v_1^2+3c_s^2)\frac{v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} +$$
$$(-1+3v_1^2+c_s^2)\frac{\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+v_2^2+3c_s^2)\frac{v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-1+3v_2^2+c_s^2)\frac{\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} -$$
$$\frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+v_3^2+3c_s^2)\frac{v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + (-1+3v_3^2+c_s^2)\frac{\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$C_1\frac{\delta_l^4}{72\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + (10v_1^2\omega_1 - 4\omega_1 + 6c_s^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2 + 20v_1^2\omega_2 - 15v_1^2\omega_1\omega_2)\frac{v_1\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^4}$$
$$+ (-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_1 v_2\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} +$$
$$(-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_2\frac{v_1\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} +$$
$$(3v_1^2\omega_1 - 2\omega_1 + 2c_s^2\omega_1 + 3v_2^2\omega_1 + 2\omega_2 - 3v_2^2\omega_2 + 6c_s^2\omega_1\omega_2 - 14c_s^2\omega_2 - 3v_1^2\omega_2)\frac{c_s^2\delta_l^4}{36\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} +$$

$$
\begin{aligned}
&(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + \\
&(-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + \\
&(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1 v_2\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_2^3} + C_3\frac{v_2\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + \\
&(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_4\frac{\delta_l^4}{72\omega_1\omega_2\delta_t}\frac{\partial^4 \rho}{\partial x_2^4} + \\
&(-4\omega_1 + 6c_s^2\omega_1 + 10v_2^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 - 15v_2^2\omega_1\omega_2 + 20v_2^2\omega_2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2)\frac{v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + \\
&(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_1 v_3\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4 \rho}{\partial x_1^3\partial x_3} + \\
&(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_5\frac{v_1\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_6\frac{v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} \\
&+ C_7\frac{v_2\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_8\frac{v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_9\frac{v_1\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + \\
&(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_2 v_3\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4 \rho}{\partial x_2^3\partial x_3} + \\
&(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{10}\frac{v_2\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + \\
&(3v_1^2\omega_1 - 2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 - 3v_3^2\omega_2 + 3\omega_1 v_3^2 + 6c_s^2\omega_1\omega_2 - 14c_s^2\omega_2 - 3v_1^2\omega_2)\frac{c_s^2\delta_l^4}{36\omega_1\omega_2\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_3^2} + \\
&(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + \\
&(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{11}\frac{v_2\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{12}\frac{v_1\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + \\
&(-2\omega_1 + 2c_s^2\omega_1 + 3v_2^2\omega_1 + 2\omega_2 - 3v_3^2\omega_2 + 3\omega_1 v_3^2 - 3v_2^2\omega_2 + 6c_s^2\omega_1\omega_2 - 14c_s^2\omega_2)\frac{c_s^2\delta_l^4}{36\omega_1\omega_2\delta_t}\frac{\partial^4 \rho}{\partial x_2^2\partial x_3^2} + \\
&(-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + \\
&(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + \\
&(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1 v_3\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_3^3} + C_{13}\frac{v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + \\
&(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + \\
&(-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_2 v_3\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4 \rho}{\partial x_2\partial x_3^3} + C_{14}\frac{v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&(-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{15}\frac{\delta_l^4}{72\omega_1\omega_2\delta_t}\frac{\partial^4 \rho}{\partial x_3^4} + \\
&(-4\omega_1 + 6c_s^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 + 20v_3^2\omega_2 + 10\omega_1 v_3^2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2 - 15\omega_1 v_3^2\omega_2)\frac{v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$C_1 = -6v_1^2\omega_1 - 2c_s^2\omega_1 + 12v_1^4\omega_2 + 48v_1^2c_s^2\omega_2 + 4c_s^4\omega_2 + 2c_s^4\omega_1 - 36v_1^2c_s^2\omega_1\omega_2 + 6v_1^4\omega_1 + 24v_1^2c_s^2\omega_1 - 9v_1^4\omega_1\omega_2 + 3c_s^2\omega_1\omega_2 - 4c_s^2\omega_2 - 12v_1^2\omega_2 - 3c_s^4\omega_1\omega_2 + 9v_1^2\omega_1\omega_2$

$C_2 = 4v_1^2\omega_4\omega_2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 - 18\omega_4 v_2^2\omega_2\omega_3 + 12\omega_4 c_s^2\omega_1\omega_3 - 9v_1^2\omega_4\omega_1\omega_2 + 6\omega_4 c_s^2\omega_2\omega_3 + 18\omega_4 v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4 c_s^2\omega_1\omega_2\omega_3 - 9v_1^2\omega_1\omega_2\omega_3 + 6v_1^2\omega_4\omega_1\omega_2\omega_3 + 2v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_3 = 6\omega_4 v_2^2\omega_1\omega_2\omega_3 - 18v_1^2\omega_4\omega_2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 - 9\omega_4 v_2^2\omega_1\omega_2 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 4\omega_4 v_2^2\omega_2\omega_3 + 12\omega_4 c_s^2\omega_1\omega_3 + 6\omega_4 c_s^2\omega_2\omega_3 - 9v_2^2\omega_1\omega_2\omega_3 + 2\omega_4 v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4 c_s^2\omega_1\omega_2\omega_3 + 18v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_4 = 12v_2^4\omega_2 - 2c_s^2\omega_1 - 9v_2^4\omega_1\omega_2 - 6v_2^2\omega_1 + 4c_s^4\omega_2 + 9v_2^2\omega_1\omega_2 + 48c_s^2v_2^2\omega_2 + 2c_s^4\omega_1 + 24c_s^2v_2^2\omega_1 - 12v_2^2\omega_2 + 3c_s^2\omega_1\omega_2 - 4c_s^2\omega_2 - 36c_s^2v_2^2\omega_1\omega_2 + 6v_2^4\omega_1 - 3c_s^4\omega_1\omega_2$

$C_5 = 4v_1^2\omega_4\omega_2\omega_3 + 18\omega_4\omega_1 v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 12\omega_4 c_s^2\omega_1\omega_3 - 9v_1^2\omega_4\omega_1\omega_2 + 6\omega_4 c_s^2\omega_2\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4 c_s^2\omega_1\omega_2\omega_3 - 9v_1^2\omega_1\omega_2\omega_3 + 6v_1^2\omega_4\omega_1\omega_2\omega_3 + 2v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 18\omega_4 v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_6 = 2\omega_4\omega_1 v_3^2\omega_3 + 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 6\omega_4 c_s^2\omega_1\omega_3 - 6\omega_4 c_s^2\omega_2\omega_3 - 9\omega_1\omega_2\omega_3 - 9\omega_4\omega_1 v_3^2\omega_2 + 9\omega_1 v_3^2\omega_2\omega_3 - 2\omega_4 v_3^2\omega_2\omega_3 - 2\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_7 = 27c_s^2\omega_1\omega_2\omega_3 - 9\omega_4 v_2^2\omega_1\omega_2 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 - 2\omega_4 v_2^2\omega_2\omega_3 + 6\omega_4 c_s^2\omega_1\omega_3 - 6\omega_4 c_s^2\omega_2\omega_3 + 9v_2^2\omega_1\omega_2\omega_3 + 2\omega_4 v_2^2\omega_1\omega_3 - 9\omega_1\omega_2\omega_3 - 2\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_8 = 2\omega_4\omega_1 v_3^2\omega_3 + 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 6\omega_4 c_s^2\omega_1\omega_3 - 6\omega_4 c_s^2\omega_2\omega_3 - 9\omega_1\omega_2\omega_3 - 9\omega_4\omega_1 v_3^2\omega_2 + 9\omega_1 v_3^2\omega_2\omega_3 - 2\omega_4 v_3^2\omega_2\omega_3 - 2\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_9 = -2v_1^2\omega_4\omega_2\omega_3 + 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 6\omega_4 c_s^2\omega_1\omega_3 - 9v_1^2\omega_4\omega_1\omega_2 - 6\omega_4 c_s^2\omega_2\omega_3 - 9\omega_1\omega_2\omega_3 + 9v_1^2\omega_1\omega_2\omega_3 + 2v_1^2\omega_4\omega_1\omega_3 - 2\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_{10} = 6\omega_4 v_2^2\omega_1\omega_2\omega_3 + 18\omega_4\omega_1 v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 - 9\omega_4 v_2^2\omega_1\omega_2 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 4\omega_4 v_2^2\omega_2\omega_3 + 12\omega_4 c_s^2\omega_1\omega_3 + 6\omega_4 c_s^2\omega_2\omega_3 - 9v_2^2\omega_1\omega_2\omega_3 + 2\omega_4 v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4 c_s^2\omega_1\omega_2\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 18\omega_4 v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_{11} = 27c_s^2\omega_1\omega_2\omega_3 - 9\omega_4 v_2^2\omega_1\omega_2 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 - 2\omega_4 v_2^2\omega_2\omega_3 + 6\omega_4 c_s^2\omega_1\omega_3 - 6\omega_4 c_s^2\omega_2\omega_3 + 9v_2^2\omega_1\omega_2\omega_3 + 2\omega_4 v_2^2\omega_1\omega_3 - 9\omega_1\omega_2\omega_3 - 2\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_{12} = -2v_1^2\omega_4\omega_2\omega_3 + 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 6\omega_4 c_s^2\omega_1\omega_3 - 9v_1^2\omega_4\omega_1\omega_2 - 6\omega_4 c_s^2\omega_2\omega_3 - 9\omega_1\omega_2\omega_3 + 9v_1^2\omega_1\omega_2\omega_3 + 2v_1^2\omega_4\omega_1\omega_3 - 2\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_{13} = -18v_1^2\omega_4\omega_2\omega_3 + 2\omega_4\omega_1 v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 6\omega_4\omega_1 v_3^2\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 12\omega_4 c_s^2\omega_1\omega_3 + 6\omega_4 c_s^2\omega_2\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4 c_s^2\omega_1\omega_2\omega_3 - 9\omega_4\omega_1 v_3^2\omega_2 - 9\omega_1 v_3^2\omega_2\omega_3 + 18v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 + 4\omega_4 v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_{14} = 2\omega_4\omega_1 v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 6\omega_4\omega_1 v_3^2\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 - 18\omega_4 v_2^2\omega_2\omega_3 + 12\omega_4 c_s^2\omega_1\omega_3 + 6\omega_4 c_s^2\omega_2\omega_3 + 18\omega_4 v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4 c_s^2\omega_1\omega_2\omega_3 - 9\omega_4\omega_1 v_3^2\omega_2 - 9\omega_1 v_3^2\omega_2\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 + 4\omega_4 v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_{15} = -2c_s^2\omega_1 - 36c_s^2\omega_1 v_3^2\omega_2 - 9\omega_1 v_3^4\omega_2 + 6\omega_1 v_3^4 + 24c_s^2\omega_1 v_3^2 + 4c_s^4\omega_2 - 12v_3^2\omega_2 + 2c_s^4\omega_1 - 6\omega_1 v_3^2 + 48c_s^2 v_3^2\omega_2 + 3c_s^2\omega_1\omega_2 - 4c_s^2\omega_2 + 12v_3^4\omega_2 + 9\omega_1 v_3^2\omega_2 - 3c_s^4\omega_1\omega_2$

2.7.3 Conservation of momentum: ρv_1

$$
\begin{aligned}
& v_1\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (v_1^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{2v_1\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_2\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_1v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_3} + \\
& \frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (6v_1^2\omega_1 - 2\omega_1 + 4c_s^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 - 6c_s^2\omega_1\omega_2 + 8c_s^2\omega_2 + 12v_1^2\omega_2 - 9v_1^2\omega_1\omega_2)\frac{\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + \\
& (2\omega_1 - 3\omega_1\omega_2 + 4\omega_2)\frac{v_1\delta_l^2\rho}{\omega_1\omega_2\delta_t}\left(\frac{\partial v_1}{\partial x_1}\right)^2 + (-\omega_1 + c_s^2\omega_1 + 3v_2^2\omega_1 + \omega_2 - 3v_2^2\omega_2 - c_s^2\omega_2)\frac{\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_2} + \\
& (\omega_1 - \omega_2)\frac{2v_2\delta_l^2\rho}{\omega_1\omega_2\delta_t}\frac{\partial v_2}{\partial x_1}\frac{\partial v_2}{\partial x_2} + (-\omega_1 + c_s^2\omega_1 + \omega_2 - 3v_3^2\omega_2 + 3\omega_1 v_3^2 - c_s^2\omega_2)\frac{\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_3} + (\omega_1 - \omega_2)\frac{2v_3\delta_l^2\rho}{\omega_1\omega_2\delta_t}\frac{\partial v_3}{\partial x_1}\frac{\partial v_3}{\partial x_3} + \\
& (-2\omega_1 + 6c_s^2\omega_1 + 6v_2^2\omega_1 + 2\omega_2 - 6v_2^2\omega_2 + 3c_s^2\omega_1\omega_2 - 12c_s^2\omega_2)\frac{\delta_l^2}{6\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\omega_1\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + \\
& (-2\omega_1 + 6c_s^2\omega_1 + 2\omega_2 - 6v_3^2\omega_2 + 6\omega_1 v_3^2 + 3c_s^2\omega_1\omega_2 - 12c_s^2\omega_2)\frac{\delta_l^2}{6\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\omega_1\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} + \\
& (2v_1^2\omega_1 - 2\omega_1 + 6c_s^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2 + 4v_1^2\omega_2 - 3v_1^2\omega_1\omega_2)\frac{v_1\delta_l^2}{6\omega_1\omega_2\delta_t}\frac{\partial^2\rho}{\partial x_1^2} + \\
& (6v_1^2\omega_1 - 2\omega_1 + 2c_s^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 - 3c_s^2\omega_1\omega_2 + 4c_s^2\omega_2 + 12v_1^2\omega_2 - 9v_1^2\omega_1\omega_2)\frac{\delta_l^2\rho}{6\omega_1\omega_2\delta_t}\frac{\partial^2 v_1}{\partial x_1^2} + \\
& (-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_2\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial^2\rho}{\partial x_1\partial x_2} + \\
& (-2\omega_1 + 2c_s^2\omega_1 + 6v_2^2\omega_1 + 2\omega_2 - 6v_2^2\omega_2 + 3c_s^2\omega_1\omega_2 - 8c_s^2\omega_2)\frac{\delta_l^2\rho}{6\omega_1\omega_2\delta_t}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2+\omega_1)\frac{c_s^2\delta_l^2\rho}{2\omega_1\delta_t}\frac{\partial^2 v_1}{\partial x_2^2} + \\
& (-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_3\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial^2\rho}{\partial x_1\partial x_3} + \\
& (-2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 - 6v_3^2\omega_2 + 6\omega_1 v_3^2 + 3c_s^2\omega_1\omega_2 - 8c_s^2\omega_2)\frac{\delta_l^2\rho}{6\omega_1\omega_2\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2\rho}{2\omega_1\delta_t}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1^3} \\
& + C_2\frac{v_1\delta_l^3\rho}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_3\frac{v_1v_2\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + C_4\frac{v_2\delta_l^3\rho}{6\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} + C_5\frac{v_1\delta_l^3\rho}{12\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + C_6\frac{\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} - \\
& \frac{v_1c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_7\frac{v_2\delta_l^3\rho}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + (-1+v_2^2+3c_s^2)\frac{v_1v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C_8\frac{v_2\delta_l^3\rho}{12\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_1}{\partial x_2^3} + (-1+3v_2^2+c_s^2)\frac{v_1\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} \\
& + C_9\frac{v_1v_3\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + C_{10}\frac{v_3\delta_l^3\rho}{6\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} + C_{11}\frac{v_1\delta_l^3\rho}{12\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + C_{12}\frac{v_2v_3\delta_l^3}{3\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3} + \\
& C_{13}\frac{v_3\delta_l^3\rho}{6\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + C_{14}\frac{v_2\delta_l^3\rho}{6\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + C_{15}\frac{v_3\delta_l^3\rho}{4\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_1}{\partial x_2^2\partial x_3} - \frac{v_1c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + \\
& C_{16}\frac{\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} - \frac{v_1c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C_{17}\frac{v_3\delta_l^3\rho}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + C_{18}\frac{v_2\delta_l^3\rho}{4\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_1}{\partial x_2\partial x_3^2} - \frac{v_1c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + \\
& (-1+v_3^2+3c_s^2)\frac{v_1v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_{19}\frac{v_3\delta_l^3\rho}{12\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_1}{\partial x_3^3} + (-1+3v_3^2+c_s^2)\frac{v_1\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + C_{20}\frac{v_1\delta_l^4}{36\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + \\
& C_{21}\frac{\delta_l^4\rho}{36\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_{22}\frac{v_2\delta_l^4}{36\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C_{23}\frac{v_1v_2\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{24}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} +
\end{aligned}
$$

$$C_{25}\frac{v_1\delta_l^4}{36\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{26}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{27}\frac{v_1v_2\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{28}\frac{v_2\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} +$$
$$C_{29}\frac{v_1v_2\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{30}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{31}\frac{v_1\delta_l^4}{72\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C_{32}\frac{\delta_l^4\rho}{24\omega_4^2\omega_1^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_2^4} +$$
$$(-4\omega_1 + 6c_s^2\omega_1 + 10v_2^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 - 15v_2^2\omega_1\omega_2 + 20v_2^2\omega_2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2)\frac{v_1v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$C_{33}\frac{v_3\delta_l^4}{36\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{34}\frac{v_1v_3\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{35}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_{36}\frac{v_1v_2v_3\delta_l^4}{6\omega_1^3\omega_2^3\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{37}\frac{v_2v_3\delta_l^4\rho}{6\omega_4\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{38}\frac{v_1v_3\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C_{39}\frac{v_1v_2\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{40}\frac{v_3\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{41}\frac{v_1v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{42}\frac{v_2v_3\delta_l^4\rho}{6\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{43}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_5\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + (-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_1v_2v_3\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} +$$
$$C_{44}\frac{v_2v_3\delta_l^4\rho}{8\omega_4^2\omega_1\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_2^3\partial x_3} + (-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_1v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{45}\frac{v_1v_2\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$C_{46}\frac{v_1\delta_l^4}{36\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{47}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{48}\frac{v_1v_3\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{49}\frac{v_2\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{50}\frac{v_1v_2\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{51}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_5\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{52}\frac{v_2v_3\delta_l^4\rho}{6\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} +$$
$$(-2\omega_1 + 2c_s^2\omega_1 + 3v_2^2\omega_1 + 2\omega_2 - 3v_3^2\omega_2 + 3\omega_1 v_3^2 - 3v_2^2\omega_2 + 6c_s^2\omega_1\omega_2 - 14c_s^2\omega_2)\frac{v_1c_s^2\delta_l^4}{36\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} +$$
$$C_{53}\frac{\delta_l^4\rho}{8\omega_4^2\omega_1^3\omega_5\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} + (-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_1v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} +$$
$$(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_1v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{54}\frac{v_3\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{55}\frac{v_1v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}$$
$$+ C_{56}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + (-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_1v_2v_3\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{57}\frac{v_2v_3\delta_l^4\rho}{8\omega_4^2\omega_1\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_2\partial x_3^3}$$
$$+ C_{58}\frac{v_1v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + (-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_1v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{59}\frac{v_1\delta_l^4}{72\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$C_{60}\frac{\delta_l^4\rho}{24\omega_4^2\omega_1^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_3^4} +$$
$$(-4\omega_1 + 6c_s^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 + 20v_3^2\omega_2 + 10\omega_1 v_3^2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2 - 15\omega_1 v_3^2\omega_2)\frac{v_1v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

$$C_1 = 12v_1^2\omega_1^2\omega_2 - 4c_s^4\omega_1^2\omega_2 + 8c_s^4\omega_2^2 + 24v_1^2c_s^2\omega_1^2\omega_2^2 + 72v_1^2c_s^2\omega_2^2 - c_s^2\omega_1^2\omega_2^2 + 7v_1^4\omega_1^2\omega_2^2 + 16v_1^4\omega_2^2 - 4c_s^2\omega_1^2 + 4c_s^2\omega_1^2\omega_2 - 12v_1^4\omega_1^2\omega_2 - 7v_1^2\omega_1^2\omega_2^2 - 48v_1^2c_s^2\omega_1^2\omega_2 + c_s^4\omega_1^2\omega_2^2 - 4v_1^2\omega_1^2 - 8c_s^4\omega_1\omega_2^2 + 48v_1^2c_s^2\omega_1\omega_2 + 24v_1^2\omega_1\omega_2^2 - 16v_1^2\omega_2^2 + 16v_1^4\omega_1\omega_2 - 8c_s^2\omega_2^2 + 24v_1^2c_s^2\omega_1^2 - 24v_1^4\omega_1\omega_2^2 + 8c_s^2\omega_1\omega_2^2 + 4v_1^4\omega_1^2 + 4c_s^4\omega_1^2 - 96v_1^2c_s^2\omega_1\omega_2^2 - 16v_1^2\omega_1\omega_2$$

$$C_2 = 16\omega_1\omega_2^2 - 20v_1^2\omega_1^2\omega_2 + 5c_s^2\omega_1^2\omega_2^2 + 8c_s^2\omega_1^2 - 4\omega_1^2 - 12c_s^2\omega_1^2\omega_2 - 8\omega_1\omega_2 + 11v_1^2\omega_1^2\omega_2^2 + 8v_1^2\omega_1^2 + 8\omega_1^2\omega_2 - 40v_1^2\omega_1\omega_2^2 + 28v_1^2\omega_2^2 - 12\omega_2^2 + 8c_s^2\omega_1\omega_2 + 20c_s^2\omega_2^2 - 24c_s^2\omega_1\omega_2^2 - 4\omega_1^2\omega_2^2 + 24v_1^2\omega_1\omega_2$$

$$C_3 = -3\omega_1\omega_2^2 + 3v_2^2\omega_1\omega_2^2 + 2v_2^2\omega_1^2 + 12c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1\omega_2 + 2v_2^2\omega_1\omega_2 + 2v_1^2\omega_1^2 + 3\omega_1^2\omega_2 - 3v_2^2\omega_1^2\omega_2 + 2v_1^2\omega_2^2 + 2\omega_2^2 - 6c_s^2\omega_1\omega_2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 4v_2^2\omega_2^2 - 4v_1^2\omega_1\omega_2$$

$$C_4 = -2\omega_1\omega_2^2 + 2v_2^2\omega_1\omega_2^2 - 4\omega_1^2\omega_3 - 4c_s^2\omega_2^2\omega_3 - 4c_s^2\omega_1\omega_2\omega_3 + 2v_2^2\omega_1^2\omega_3 - v_2^2\omega_1^2\omega_2\omega_3 - 6c_s^2\omega_1^2\omega_2 + \omega_1^2\omega_2\omega_3 + v_2^2\omega_1\omega_2^2\omega_3 + 6v_1^2\omega_2^2\omega_3 - \omega_1\omega_2^2\omega_3 + 2\omega_1^2\omega_2 - 2v_2^2\omega_1^2\omega_2 + 4\omega_1\omega_2\omega_3 - 12v_1^2\omega_1\omega_2\omega_3 + 6v_1^2\omega_1^2\omega_3 + 3c_s^2\omega_1\omega_2^2\omega_3 + 6c_s^2\omega_1\omega_2^2 - 3c_s^2\omega_1^2\omega_2\omega_3 - 2v_2^2\omega_2^2\omega_3 + 8c_s^2\omega_1^2\omega_3$$

$$C_5 = -8v_1^2\omega_4\omega_1\omega_2^2 + 12\omega_4 v_2^2\omega_1\omega_2\omega_3 - 8\omega_4\omega_1^2\omega_3 + 18c_s^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 - 12\omega_4 c_s^2\omega_1^2\omega_2 - 8\omega_4\omega_1\omega_2^2\omega_3 + 8\omega_4\omega_1\omega_2^2 + 4v_1^2\omega_4\omega_1^2\omega_3 - 12v_1^2\omega_1\omega_2^2\omega_3 + 12\omega_4 c_s^2\omega_1\omega_2^2\omega_3 + 2v_1^2\omega_4\omega_1\omega_2^2\omega_3 + 16\omega_4 c_s^2\omega_2^2\omega_3 + 18\omega_4 c_s^2\omega_1^2\omega_2^2 + 12\omega_4 v_2^2\omega_1^2\omega_3 - 12\omega_4 c_s^2\omega_1^2\omega_2\omega_3 + 12\omega_1\omega_2^2\omega_3 - 2v_1^2\omega_4\omega_1^2\omega_2\omega_3 + 6v_1^2\omega_1^2\omega_2^2\omega_3 - 11\omega_4 c_s^2\omega_1^2\omega_2^2\omega_3 - 24\omega_4 c_s^2\omega_1\omega_2^2 - 3v_1^2\omega_4\omega_1^2\omega_2^2\omega_3 - 4v_1^2\omega_4\omega_1^2\omega_2 + 4\omega_4\omega_1^2\omega_2 + 4\omega_4 c_s^2\omega_1\omega_2\omega_3 - 24\omega_4 v_2^2\omega_2^2\omega_3 + 16\omega_4 c_s^2\omega_1^2\omega_3 - 6\omega_1^2\omega_2^2\omega_3 - 36c_s^2\omega_1\omega_2^2\omega_3 - 18\omega_4 v_2^2\omega_1^2\omega_2\omega_3 - 6\omega_4\omega_1^2\omega_2^2 - 4\omega_4\omega_1\omega_2\omega_3 + 6v_1^2\omega_4\omega_1^2\omega_2^2 + 18\omega_4 v_2^2\omega_1\omega_2^2\omega_3 + 8v_1^2\omega_4\omega_2^2\omega_3 + 3\omega_4\omega_1^2\omega_2^2\omega_3$$

$$C_6 = -18c_s^2v_2^2\omega_2^2 - 3v_2^2\omega_1\omega_2^2 - 2c_s^4\omega_1^2\omega_2 - 14c_s^4\omega_2^2 + 2v_2^4\omega_1\omega_2 - 15c_s^2v_2^2\omega_1^2\omega_2 - 2v_2^2\omega_1^2 - 2c_s^2\omega_1^2 + 2c_s^2\omega_1^2\omega_2 + 3v_2^4\omega_1\omega_2^2 - 2v_2^2\omega_1\omega_2 - c_s^4\omega_1^2\omega_2^2 - 4v_2^4\omega_2^2 + 3v_2^2\omega_1^2\omega_2 + 14c_s^4\omega_1\omega_2^2 + 2v_2^4\omega_1^2 + 15c_s^2v_2^2\omega_1\omega_2^2 + 2c_s^2\omega_2^2 - 2c_s^2\omega_1\omega_2^2 - 3v_2^4\omega_1^2\omega_2 + 4v_2^2\omega_2^2 + 6c_s^2v_2^2\omega_1\omega_2 + 12c_s^2v_2^2\omega_1^2 + 2c_s^4\omega_1^2$$

$$C_7 = -5\omega_1\omega_2^2 + 11v_2^2\omega_1\omega_2^2 + 8v_2^2\omega_1^2 + 8c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 - 2\omega_1\omega_2 + 6v_2^2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 11v_2^2\omega_1^2\omega_2 + 6\omega_2^2 + 2c_s^2\omega_1\omega_2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 14v_2^2\omega_2^2$$

$$C_8 = 9\omega_4 c_s^2\omega_1 - 6v_2^2\omega_3 + 6\omega_4 + 9c_s^2\omega_1\omega_3 + 6\omega_4 v_2^2\omega_3 + 18\omega_4 c_s^2\omega_3 - 6\omega_4 c_s^2\omega_1\omega_3 + 3\omega_4 v_2^2\omega_1 - 18c_s^2\omega_3 - 18\omega_4 c_s^2 - 2\omega_4 v_2^2\omega_1\omega_3 - 6\omega_4\omega_3 + 6\omega_3 - 6\omega_4 v_2^2 - 3\omega_1\omega_3 + 3v_2^2\omega_1\omega_3 - 3\omega_4\omega_1 + 2\omega_4\omega_1\omega_3$$

$$C_9 = -4v_3^2\omega_2^2 - 3\omega_1\omega_2^2 - 3\omega_1^2v_3^2\omega_2 + 12c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1^2v_3^2 + 2\omega_1\omega_2 + 2v_1^2\omega_1^2 + 3\omega_1^2\omega_2 + 3\omega_1 v_3^2\omega_2^2 + 2v_1^2\omega_2^2 + 2\omega_2^2 - 6c_s^2\omega_1\omega_2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2\omega_1 v_3^2\omega_2 - 4v_1^2\omega_1\omega_2$$

$C_{10} = -2\omega_1\omega_2^2 - 4\omega_1^2\omega_3 - \omega_1^2 v_3^2\omega_2\omega_3 - 4c_s^2\omega_2^2\omega_3 - 4c_s^2\omega_1\omega_2\omega_3 - 2\omega_1^2 v_3^2\omega_2 - 2v_3^2\omega_2^2\omega_3 - 6c_s^2\omega_1^2\omega_2 + \omega_1^2\omega_2\omega_3 + \omega_1 v_3^2\omega_2^2\omega_3 + 6v_1^2\omega_2^2\omega_3 - \omega_1\omega_2^2\omega_3 + 2\omega_1^2\omega_2 + 2\omega_1 v_3^2\omega_2^2 + 4\omega_1\omega_2\omega_3 + 2\omega_1^2 v_3^2\omega_3 - 12v_1^2\omega_1\omega_2\omega_3 + 6v_1^2\omega_1^2\omega_3 + 3c_s^2\omega_1\omega_2^2\omega_3 + 6c_s^2\omega_1\omega_2^2 - 3c_s^2\omega_1^2\omega_2\omega_3 + 8c_s^2\omega_1^2\omega_3$

$C_{11} = -8v_1^2\omega_4\omega_1\omega_2^2 - 24\omega_4 v_3^2\omega_2^2\omega_3 - 8\omega_4\omega_1^2\omega_3 + 18c_s^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 - 12\omega_4 c_s^2\omega_1^2\omega_2 - 8\omega_4\omega_1\omega_2^2\omega_3 + 8\omega_4\omega_1\omega_2^2 + 4v_1^2\omega_4\omega_1^2\omega_3 + 12\omega_4\omega_1 v_3^2\omega_2\omega_3 - 12v_1^2\omega_1\omega_2^2\omega_3 + 12\omega_4 c_s^2\omega_1\omega_2^2\omega_3 + 2v_1^2\omega_4\omega_1\omega_2^2\omega_3 + 16\omega_4 c_s^2\omega_2^2\omega_3 + 18\omega_4 c_s^2\omega_1^2\omega_2^2 - 12\omega_4 c_s^2\omega_1^2\omega_2\omega_3 + 12\omega_1\omega_2^2\omega_3 - 2v_1^2\omega_4\omega_1^2\omega_2\omega_3 + 6v_1^2\omega_1^2\omega_2^2\omega_3 - 11\omega_4 c_s^2\omega_1^2\omega_2^2\omega_3 - 24\omega_4 c_s^2\omega_1\omega_2^2 - 3v_1^2\omega_4\omega_1^2\omega_2^2\omega_3 - 4v_1^2\omega_4\omega_1^2\omega_2 + 4\omega_4\omega_1^2\omega_2 + 4\omega_4 c_s^2\omega_1\omega_2\omega_3 - 18\omega_4\omega_1^2 v_3^2\omega_2\omega_3 + 16\omega_4 c_s^2\omega_1^2\omega_3 - 6\omega_1^2\omega_2^2\omega_3 - 36c_s^2\omega_1\omega_2^2\omega_3 - 6\omega_4\omega_1^2\omega_2^2 - 4\omega_4\omega_1\omega_2\omega_3 + 18\omega_4\omega_1 v_3^2\omega_2^2\omega_3 + 12\omega_4\omega_1^2 v_3^2\omega_3 + 6v_1^2\omega_4\omega_1^2\omega_2^2 + 8v_1^2\omega_4\omega_2^2\omega_3 + 3\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{12} = v_3^2\omega_2^2 + v_2^2\omega_1^2 + 6c_s^2\omega_1^2 - 2\omega_1^2 + \omega_1^2 v_3^2 + 4\omega_1\omega_2 - 2v_2^2\omega_1\omega_2 - 2\omega_2^2 - 12c_s^2\omega_1\omega_2 + 6c_s^2\omega_2^2 + v_2^2\omega_2^2 - 2\omega_1 v_3^2\omega_2$

$C_{13} = -12\omega_4 v_2^2\omega_1\omega_2\omega_3 - 2\omega_4 v_3^2\omega_2^2\omega_3 - 4\omega_4\omega_1^2\omega_3 + 3\omega_4\omega_1^2 v_3^2\omega_2^2 - 9c_s^2\omega_1^2\omega_2^2\omega_3 + \omega_4\omega_1^2\omega_2\omega_3 - 6\omega_4 c_s^2\omega_1^2\omega_2 - \omega_4\omega_1\omega_2^2\omega_3 + 4\omega_4\omega_1\omega_2^2 + 3\omega_4 c_s^2\omega_1\omega_2^2\omega_3 + 6\omega_1 v_3^2\omega_2^2\omega_3 - 4\omega_4 c_s^2\omega_2^2\omega_3 + 9\omega_4 c_s^2\omega_1^2\omega_2^2 + 6\omega_4 v_2^2\omega_1^2\omega_3 - 3\omega_4 c_s^2\omega_1^2\omega_2\omega_3 - 6\omega_1\omega_2^2\omega_3 - 2\omega_4\omega_1^2 v_3^2\omega_2 - 12\omega_4 c_s^2\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_4 c_s^2\omega_1\omega_2\omega_3 - \omega_4\omega_1^2 v_3^2\omega_2\omega_3 + 6\omega_4 v_2^2\omega_2^2\omega_3 + 8\omega_4 c_s^2\omega_1^2\omega_3 + 3\omega_1^2\omega_2^2\omega_3 + 18c_s^2\omega_1\omega_2^2\omega_3 - 4\omega_4\omega_1 v_3^2\omega_2^2 - 3\omega_1^2 v_3^2\omega_2^2\omega_3 - 3\omega_4\omega_1^2\omega_2^2 + 4\omega_4\omega_1\omega_2\omega_3 + \omega_4\omega_1 v_3^2\omega_2^2\omega_3 + 2\omega_4\omega_1^2 v_3^2\omega_3$

$C_{14} = 6\omega_4 v_3^2\omega_2^2\omega_3 - 4\omega_4\omega_1^2\omega_3 - 9c_s^2\omega_1^2\omega_2^2\omega_3 + \omega_4\omega_1^2\omega_2\omega_3 - 6\omega_4 c_s^2\omega_1^2\omega_2 - \omega_4\omega_1\omega_2^2\omega_3 + 4\omega_4\omega_1\omega_2^2 - 12\omega_4\omega_1 v_3^2\omega_2\omega_3 + 3\omega_4 c_s^2\omega_1\omega_2^2\omega_3 - 4\omega_4 v_2^2\omega_1\omega_2^2 + 6v_2^2\omega_1\omega_2^2\omega_3 - 4\omega_4 c_s^2\omega_2^2\omega_3 + 9\omega_4 c_s^2\omega_1^2\omega_2^2 + 2\omega_4 v_2^2\omega_1^2\omega_3 - 3\omega_4 c_s^2\omega_1^2\omega_2\omega_3 - 6\omega_1\omega_2^2\omega_3 - 12\omega_4 c_s^2\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_4 c_s^2\omega_1\omega_2\omega_3 - 3v_2^2\omega_1^2\omega_2^2\omega_3 - 2\omega_4 v_2^2\omega_2^2\omega_3 + 3\omega_4 v_2^2\omega_1^2\omega_2^2 + 8\omega_4 c_s^2\omega_1^2\omega_3 + 3\omega_1^2\omega_2^2\omega_3 + 18c_s^2\omega_1\omega_2^2\omega_3 - 2\omega_4 v_2^2\omega_1^2\omega_2 - \omega_4 v_2^2\omega_1^2\omega_2\omega_3 - 3\omega_4\omega_1^2\omega_2^2 + 4\omega_4\omega_1\omega_2\omega_3 + 6\omega_4\omega_1^2 v_3^2\omega_3 + \omega_4 v_2^2\omega_1\omega_2^2\omega_3$

$C_{15} = 3\omega_4 c_s^2\omega_1 + 2\omega_4 - 3c_s^2\omega_1\omega_3 - \omega_1 v_3^2\omega_3 + 6c_s^2\omega_3 - 6\omega_4 c_s^2 + \omega_4\omega_1 v_3^2 - 2\omega_3 + \omega_1\omega_3 - 2\omega_4 v_3^2 + 2v_3^2\omega_3 - \omega_4\omega_1$

$C_{16} = 4v_3^2\omega_2^2 - 2c_s^4\omega_1^2\omega_2 - 14c_s^4\omega_2^2 + 3\omega_1 v_3^4\omega_2^2 + 15c_s^2\omega_1 v_3^2\omega_2^2 + 3\omega_1^2 v_3^2\omega_2 + 6c_s^2\omega_1 v_3^2\omega_2 - 2c_s^2\omega_1^2 + 2\omega_1 v_3^4\omega_2 + 2c_s^2\omega_1^2\omega_2 - 2\omega_1^2 v_3^2 - c_s^4\omega_1^2\omega_2^2 - 3\omega_1 v_3^2\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 15c_s^2\omega_1^2 v_3^2\omega_2 - 3\omega_1^2 v_3^4\omega_2 - 4v_3^4\omega_2^2 + 2\omega_1^2 v_3^4 + 12c_s^2\omega_1^2 v_3^2 + 2c_s^2\omega_2^2 - 2c_s^2\omega_1\omega_2^2 - 18c_s^2 v_3^2\omega_2^2 - 2\omega_1 v_3^2\omega_2 + 2c_s^4\omega_1^2$

$C_{17} =$
$-14v_3^2\omega_2^2 - 5\omega_1\omega_2^2 - 11\omega_1^2 v_3^2\omega_2 + 8c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 + 8\omega_1^2 v_3^2 - 2\omega_1\omega_2 + 5\omega_1^2\omega_2 + 11\omega_1 v_3^2\omega_2^2 + 6\omega_2^2 + 2c_s^2\omega_1\omega_2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 6\omega_1 v_3^2\omega_2$

$C_{18} = 3\omega_4 c_s^2\omega_1 + 2v_2^2\omega_3 + 2\omega_4 - 3c_s^2\omega_1\omega_3 + \omega_4 v_2^2\omega_1 + 6c_s^2\omega_3 - 6\omega_4 c_s^2 - 2\omega_3 - 2\omega_4 v_2^2 + \omega_1\omega_3 - v_2^2\omega_1\omega_3 - \omega_4\omega_1$

$C_{19} = 9\omega_4 c_s^2\omega_1 + 6\omega_4 - 2\omega_4\omega_1 v_3^2\omega_3 + 9c_s^2\omega_1\omega_3 + 18\omega_4 c_s^2\omega_3 + 3\omega_1 v_3^2\omega_3 - 6\omega_4 c_s^2\omega_1\omega_3 - 18c_s^2\omega_3 - 18\omega_4 c_s^2 - 6\omega_4\omega_3 + 3\omega_4\omega_1 v_3^2 + 6\omega_3 - 3\omega_1\omega_3 - 6\omega_4 v_3^2 - 6v_3^2\omega_3 - 3\omega_4\omega_1 + 2\omega_4\omega_1\omega_3 + 6\omega_4 v_3^2\omega_3$

$C_{20} = -8c_s^2\omega_1^3\omega_2 - 264v_1^4\omega_1^2\omega_2^2\omega_3 + 8\omega_1^3\omega_2^2\omega_3 + 152c_s^2\omega_1^2\omega_2^2\omega_3 - 372c_s^4\omega_1\omega_2^3\omega_3 + 328v_1^2\omega_1\omega_2^3\omega_3 - 16v_1^2 c_s^2\omega_1^2\omega_2^2 + 16c_s^2\omega_1^2\omega_2^2 - 28\omega_1\omega_2^3\omega_3 + 82c_s^4\omega_1^3\omega_2^2\omega_3 - 464v_1^2 c_s^2\omega_1^3\omega_2\omega_3 + 8v_1^2 c_s^2\omega_1^3\omega_2 + 216c_s^4\omega_2^3\omega_3 + 808v_1^2 c_s^2\omega_1^2\omega_2^3\omega_3 - 98v_1^2\omega_1^3\omega_2^2\omega_3 - 160v_1^2\omega_2^3\omega_3 - 176v_1^2\omega_1\omega_2^2\omega_3 + 24c_s^4\omega_1^3\omega_2 + 760v_1^2 c_s^2\omega_2^3\omega_3 + 72c_s^4\omega_1\omega_2^2\omega_3 - 3\omega_1^3\omega_2^3\omega_3 - 84v_1^4\omega_1^3\omega_2\omega_3 - 156c_s^2\omega_1^2\omega_2^3\omega_3 + 180v_1^4\omega_1^2\omega_2^3\omega_3 + 8\omega_1^2\omega_2\omega_3 + 122c_s^2\omega_1^3\omega_2\omega_3 + 72c_s^4\omega_1^2\omega_2\omega_3 + 30v_1^2\omega_1^3\omega_2^3\omega_3 - 1088v_1^2 c_s^2\omega_1^2\omega_2^2\omega_3 - 15c_s^4\omega_1^3\omega_2^3\omega_3 - 48c_s^4\omega_1^2\omega_2^2 - 104v_1^2\omega_1^2\omega_2\omega_3 + 8\omega_1\omega_2^2\omega_3 + 4\omega_1^3\omega_3 + 144v_1^4\omega_2^3\omega_3 - 184c_s^2\omega_2^3\omega_3 + 440v_1^2 c_s^2\omega_1^2\omega_2\omega_3 - 120c_s^4\omega_1^2\omega_2^2\omega_3 + 280v_1^2\omega_1^2\omega_2^2\omega_3 - 102v_1^2 c_s^2\omega_1^3\omega_2^3\omega_3 + 160v_1^2 c_s^2\omega_1^3\omega_3 - 300v_1^4\omega_1\omega_2^3\omega_3 + 320c_s^2\omega_1\omega_2^3\omega_3 - 52c_s^2\omega_1^3\omega_3 + 24c_s^4\omega_1\omega_2^3 + 16\omega_2^3\omega_3 + 24v_1^4\omega_1^3\omega_3 + 656v_1^2 c_s^2\omega_1\omega_2^2\omega_3 + 90v_1^4\omega_1^3\omega_2^2\omega_3 - 78c_s^2\omega_1^3\omega_2^2\omega_3 - 16\omega_1^2\omega_2^2\omega_3 - 80c_s^2\omega_1\omega_2^2\omega_3 + 168v_1^4\omega_1\omega_2^2\omega_3 + 404v_1^2 c_s^2\omega_1^3\omega_2^2\omega_3 - 196v_1^2\omega_1^2\omega_2^3\omega_3 + 8v_1^2 c_s^2\omega_1\omega_2^3 - 156c_s^4\omega_1^3\omega_2\omega_3 + 94v_1^2\omega_1^3\omega_2\omega_3 + 164c_s^4\omega_1^2\omega_2^3\omega_3 + 18c_s^2\omega_1^3\omega_2^3\omega_3 - 8c_s^2\omega_1\omega_2^3 - 28v_1^2\omega_1^3\omega_3 + 72c_s^4\omega_1^3\omega_3 + 96v_1^4\omega_1^2\omega_2\omega_3 + 16\omega_1^2\omega_2^3\omega_3 - 80c_s^2\omega_1^2\omega_2\omega_3 - 10\omega_1^3\omega_2\omega_3 - 27v_1^4\omega_1^3\omega_2^3\omega_3 - 1472v_1^2 c_s^2\omega_1\omega_2^3\omega_3$

$C_{21} = -8c_s^2\omega_1^3\omega_2 - 888v_1^4\omega_1^2\omega_2^2\omega_3 + 8\omega_1^3\omega_2^2\omega_3 + 24c_s^2\omega_1^2\omega_2^2\omega_3 - 68c_s^4\omega_1\omega_2^3\omega_3 + 552v_1^2\omega_1\omega_2^3\omega_3 - 48v_1^2 c_s^2\omega_1^2\omega_2^2 + 16c_s^2\omega_1^2\omega_2^2 - 28\omega_1\omega_2^3\omega_3 + 14c_s^4\omega_1^3\omega_2^2\omega_3 - 360v_1^2 c_s^2\omega_1^3\omega_2\omega_3 + 24v_1^2 c_s^2\omega_1^3\omega_2 + 40c_s^4\omega_2^3\omega_3 + 504v_1^2 c_s^2\omega_1^2\omega_2^3\omega_3 - 154v_1^2\omega_1^3\omega_2^2\omega_3 - 288v_1^2\omega_2^3\omega_3 - 240v_1^2\omega_1\omega_2^2\omega_3 + 8c_s^4\omega_1^3\omega_2 + 552v_1^2 c_s^2\omega_2^3\omega_3 + 8c_s^4\omega_1\omega_2^2\omega_3 - 3\omega_1^3\omega_2^3\omega_3 - 312v_1^4\omega_1^3\omega_2\omega_3 - 44c_s^2\omega_1^2\omega_2^3\omega_3 + 620v_1^4\omega_1^2\omega_2^3\omega_3 + 8\omega_1^2\omega_2\omega_3 + 42c_s^2\omega_1^3\omega_2\omega_3 + 8c_s^4\omega_1^2\omega_2\omega_3 + 42v_1^2\omega_1^3\omega_2^3\omega_3 - 576v_1^2 c_s^2\omega_1^2\omega_2^2\omega_3 - 3c_s^4\omega_1^3\omega_2^3\omega_3 - 16c_s^4\omega_1^2\omega_2^2 - 168v_1^2\omega_1^2\omega_2\omega_3 + 8\omega_1\omega_2^2\omega_3 + 4\omega_1^3\omega_3 + 528v_1^4\omega_2^3\omega_3 - 56c_s^2\omega_2^3\omega_3 + 264v_1^2 c_s^2\omega_1^2\omega_2\omega_3 - 8c_s^4\omega_1^2\omega_2^2\omega_3 + 408v_1^2\omega_1^2\omega_2^2\omega_3 - 54v_1^2 c_s^2\omega_1^3\omega_2^3\omega_3 + 144v_1^2 c_s^2\omega_1^3\omega_3 - 1068v_1^4\omega_1\omega_2^3\omega_3 + 96c_s^2\omega_1\omega_2^3\omega_3 - 20c_s^2\omega_1^3\omega_3 + 8c_s^4\omega_1\omega_2^3 + 16\omega_2^3\omega_3 + 96v_1^4\omega_1^3\omega_3 + 336v_1^2 c_s^2\omega_1\omega_2^2\omega_3 + 310v_1^4\omega_1^3\omega_2^2\omega_3 - 22c_s^2\omega_1^3\omega_2^2\omega_3 - 16\omega_1^2\omega_2^2\omega_3 - 16c_s^2\omega_1\omega_2^2\omega_3 + 552v_1^4\omega_1\omega_2^2\omega_3 + 252v_1^2 c_s^2\omega_1^3\omega_2^2\omega_3 - 308v_1^2\omega_1^2\omega_2^3\omega_3 + 24v_1^2 c_s^2\omega_1\omega_2^3 - 32c_s^4\omega_1^3\omega_2\omega_3 + 174v_1^2\omega_1^3\omega_2\omega_3 + 28c_s^4\omega_1^2\omega_2^3\omega_3 + 6c_s^2\omega_1^3\omega_2^3\omega_3 - 8c_s^2\omega_1\omega_2^3 - 60v_1^2\omega_1^3\omega_3 + 16c_s^4\omega_1^3\omega_3 + 336v_1^4\omega_1^2\omega_2\omega_3 + 16\omega_1^2\omega_2^3\omega_3 - 16c_s^2\omega_1^2\omega_2\omega_3 - 10\omega_1^3\omega_2\omega_3 - 87v_1^4\omega_1^3\omega_2^3\omega_3 - 1008v_1^2 c_s^2\omega_1\omega_2^3\omega_3$

$C_{22} =$
$-4v_2^2\omega_1^3\omega_3^2 + 24v_1^2 v_2^2\omega_1^3\omega_2^2\omega_3^2 + 8\omega_1\omega_2^2\omega_3^2 - 12c_s^2\omega_1^2\omega_3^2 + 48v_1^4\omega_2^3\omega_3^2 + 4\omega_1^3\omega_3^2 + 2c_s^2 v_2^2\omega_1^3\omega_2^2\omega_3^2 + 4c_s^2\omega_1^2\omega_2^2\omega_3 + 20c_s^2\omega_2^3\omega_3^2 - 12c_s^2 v_2^2\omega_1^3\omega_2^2 + 24c_s^4\omega_1\omega_2^3\omega_3 - 8v_2^2\omega_1\omega_2^2\omega_3^2 - 36c_s^4\omega_1^2\omega_2\omega_3^2 + 216v_1^2 c_s^2\omega_1^2\omega_2^2\omega_3^2 - 24v_1^2\omega_1^2\omega_2\omega_3^2 - 36v_1^4\omega_1^3\omega_2\omega_3^2 + 96v_1^2 v_2^2\omega_1\omega_2^3\omega_3^2 + 5c_s^2\omega_1^2\omega_2^3\omega_3^2 - 4\omega_1^2\omega_2\omega_3^2 + 22c_s^2 v_2^2\omega_1\omega_2^3\omega_3^2 + 56c_s^2\omega_1^3\omega_2\omega_3^2 + 54c_s^4\omega_1^3\omega_2^2\omega_3 - 36c_s^4\omega_1^3\omega_3^2 + 48v_1^2\omega_1\omega_2^2\omega_3^2 + 24v_1^2 v_2^2\omega_1^3\omega_3^2 + 4v_2^2\omega_1^2\omega_2\omega_3^2 + 36c_s^4\omega_1^2\omega_3^2 + 6c_s^4\omega_1^3\omega_2^2\omega_3^2 - 324v_1^2 c_s^2\omega_1^3\omega_2\omega_3^2 - 8v_2^2\omega_1\omega_2^3\omega_3^2 - 36c_s^4\omega_2^3\omega_3^2 + 24v_1^2\omega_2^3\omega_3^2 - 24v_1^2\omega_1^3\omega_2^2\omega_3^2 - 72v_1^2 c_s^2\omega_1^2\omega_2^3\omega_3^2 + 24v_1^2 v_2^2\omega_1^2\omega_2\omega_3^2 + 18c_s^2\omega_1^2\omega_2^3\omega_3 + 8\omega_1\omega_2^3\omega_3^2 + 8c_s^2 v_2^2\omega_1\omega_2^3\omega_3 - 4c_s^2 v_2^2\omega_1^2\omega_2\omega_3^2 + 4c_s^2\omega_1^3\omega_2\omega_3 + 42c_s^4\omega_1\omega_2^3\omega_3^2 + 12c_s^2 v_2^2\omega_1^2\omega_3^2 - v_2^2\omega_1^3\omega_2^2\omega_3^2 - 60v_1^2\omega_1\omega_2^3\omega_3^2 - 20c_s^2 v_2^2\omega_2^3\omega_3^2 + 12c_s^2\omega_1^3\omega_2^2 + 72v_1^4\omega_1^2\omega_2^2\omega_3^2 + 8c_s^2 v_2^2\omega_1\omega_2^2\omega_3^2 + 18c_s^2 v_2^2\omega_1^3\omega_2^2\omega_3 + 24v_1^2 v_2^2\omega_1\omega_2^2\omega_3^2 + \omega_1^3\omega_2^2\omega_3^2 - 34c_s^2\omega_1^2\omega_2^2\omega_3^2 + 108v_1^2 c_s^2\omega_1\omega_2^3\omega_3^2 + v_2^2\omega_1^2\omega_2^3\omega_3^2 - 12c_s^4\omega_1^2\omega_2^2\omega_3 + 4v_2^2\omega_1^3\omega_2\omega_3^2 - 48v_1^2\omega_1^3\omega_3^2 - \omega_1^2\omega_2^3\omega_3^2 - 18c_s^2 v_2^2\omega_1^2\omega_2^3\omega_3 + 72c_s^4\omega_1^3\omega_3^2 + 40c_s^2\omega_1^2\omega_2\omega_3^2 - 8c_s^2\omega_1\omega_2^3\omega_3 - 4c_s^2 v_2^2\omega_1^3\omega_2\omega_3 - 4\omega_1^3\omega_2\omega_3^2 + 24v_1^2\omega_1^2\omega_2^3\omega_3^2 + 72v_1^2 c_s^2\omega_1^3\omega_2^2\omega_3^2 - 84c_s^4\omega_1^3\omega_2\omega_3^2 + 84v_1^2\omega_1^3\omega_2\omega_3^2 - 6c_s^4\omega_1^2\omega_3^2\omega_3^2 - 8c_s^2\omega_1\omega_2^2\omega_3^2 + 16c_s^2 v_2^2\omega_1^3\omega_3^2 - 48v_1^2 v_2^2\omega_1^2\omega_2^2\omega_3^2 - 18c_s^2\omega_1^3\omega_2^2\omega_3 - 72v_1^4\omega_1\omega_2^2\omega_3^2 - 2c_s^2 v_2^2\omega_1^2\omega_2^2\omega_3^2 - 5c_s^2\omega_1^3\omega_2^2\omega_3^2 - 4c_s^2 v_2^2\omega_1^2\omega_2^2\omega_3 - 4\omega_1^2\omega_2^2\omega_3^2 - 52c_s^2\omega_1^3\omega_3^2 + 24v_1^4\omega_1^3\omega_3^2 - 12c_s^4\omega_1^3\omega_2\omega_3 - 8\omega_2^3\omega_3^2 - 216v_1^2 c_s^2\omega_1\omega_2^2\omega_3^2 - 54c_s^4\omega_1^2\omega_2^3\omega_3 + 8v_2^2\omega_2^3\omega_3^2 + 4v_2^2\omega_1^2\omega_2^2\omega_3^2 - 48v_1^2 v_2^2\omega_1^3\omega_2\omega_3^2 - 36v_1^4\omega_1\omega_2^3\omega_3^2 - 2c_s^2 v_2^2\omega_1^2\omega_2^3\omega_3^2 + 216v_1^2 c_s^2\omega_1^3\omega_3^2 - 22c_s^2\omega_1\omega_2^3\omega_3^2 - 72v_1^2 v_2^2\omega_2^3\omega_3^2 - 20c_s^2 v_2^2\omega_1^3\omega_2\omega_3^2 - 24v_1^2 v_2^2\omega_1^2\omega_3^2\omega_3^2 + 42c_s^4\omega_1^2\omega_2^2\omega_3^2 - 24v_1^2\omega_1^2\omega_2^2\omega_3^2$

$C_{23} = -18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 - 5\omega_1^3\omega_2^2\omega_3 + 81c_s^2\omega_1^2\omega_2^2\omega_3 + 5v_2^2\omega_1^3\omega_2^2\omega_3 - 66v_1^2\omega_1\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2^2 + 3\omega_1\omega_2^3\omega_3 + 12v_2^2\omega_1\omega_2^3 - 12\omega_1\omega_2^3 + 27v_2^2\omega_1\omega_2^3\omega_3 + 84v_2^2\omega_2^3\omega_3 - 120v_1^2\omega_1\omega_2^2\omega_3 + 6v_2^2\omega_1^2\omega_2\omega_3 - 15c_s^2\omega_1^2\omega_2^3\omega_3 + 6\omega_1^2\omega_2\omega_3 - 108c_s^2\omega_1^3\omega_2\omega_3 + 6v_2^2\omega_1\omega_2^2\omega_3 - 12v_1^2\omega_1^2\omega_2\omega_3 + 42\omega_1\omega_2^2\omega_3 + 27c_s^2\omega_1^3\omega_2^2 + 12v_2^2\omega_1^3\omega_3 - 36\omega_1^3\omega_3 - 12c_s^2\omega_2^3\omega_3 + 132v_1^2\omega_1^2\omega_2^2\omega_3 + 27c_s^2\omega_1\omega_2^3\omega_3 + 9v_2^2\omega_1^3\omega_2^2 + 84c_s^2\omega_1^3\omega_3 - 12\omega_2^3\omega_3 - 9\omega_1^3\omega_2^2 -$

$24v_2^2\omega_2^3\omega_3 - 9v_2^2\omega_1^2\omega_2^2\omega_3 + 15c_s^2\omega_1^3\omega_2^2\omega_3 - 51\omega_1^2\omega_2^2\omega_3 - 54c_s^2\omega_1\omega_2^2\omega_3 - 6v_2^2\omega_1^3\omega_2 - 9v_2^2\omega_1^2\omega_2^3 - 66v_1^2\omega_1^3\omega_2\omega_3 + 6\omega_1^3\omega_2 + 9\omega_1^2\omega_2^3 + 36c_s^2\omega_1\omega_2^3 + 48v_1^2\omega_1^3\omega_3 + 5\omega_1^2\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2\omega_3 + 48\omega_1^3\omega_2\omega_3 + 6\omega_1^2\omega_2^2 - 5v_2^2\omega_1^2\omega_2^3\omega_3 - 6v_2^2\omega_1^2\omega_2^2 - 18v_2^2\omega_1^3\omega_2\omega_3$

$C_{24} = 48\omega_4^2v_2^2\omega_2^3\omega_3^2 - 32\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 540v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 + 72v_1^2\omega_4^2\omega_1^2\omega_2^3 + 24\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 - 40\omega_4^2c_s^2\omega_1^3\omega_3^2 + 117v_1^2\omega_4\omega_1^3\omega_2^3\omega_3^2 + 144v_1^2\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 60v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3 - 48v_1^2\omega_4^2\omega_2^3\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 72\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 28\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 18\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2 - 54v_1^2\omega_1^3\omega_2^3\omega_3^2 + 48\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 + 86\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 - 60v_1^4\omega_4^2\omega_1^2\omega_2^2\omega_3 - 117v_1^4\omega_4\omega_1^3\omega_2^3\omega_3^2 - 492v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 + 8v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 72\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 - 108v_1^4\omega_1^2\omega_2^3\omega_3^2 + 576v_1^2\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2 + 64\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 204v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 - 108v_1^2\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 - 96\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3 + 6\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 40\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 - 96\omega_4^2c_s^2v_2^2\omega_1\omega_2\omega_3^2 + 40v_1^4\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 36v_1^4\omega_4\omega_1^3\omega_2^2\omega_3 + 468v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 - 108v_1^4\omega_4^2\omega_1^3\omega_2\omega_3^2 + 24\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2\omega_2^3\omega_3^2 - 72v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 216v_1^4\omega_4^2\omega_1^2\omega_2^3\omega_3 + 20\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 12\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^3\omega_2\omega_3^2 + 174v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 36v_1^4\omega_4\omega_1^3\omega_2^2\omega_3^2 - 24v_1^4\omega_4^2\omega_1^3\omega_2\omega_3 + 32\omega_4^2c_s^4\omega_1^3\omega_3^2 - 492v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 324v_1^2c_s^2\omega_1^2\omega_2^3\omega_3^2 - 36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 - 216v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3 + 48v_1^4\omega_4^2\omega_1^3\omega_3^2 + 144v_1^2\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 54v_1^2\omega_4^2\omega_1^3\omega_3^2 + 24v_1^2\omega_4^2\omega_1^3\omega_2\omega_3 + 48\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 - 12\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 16\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 264v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 - 72v_1^4\omega_4\omega_1\omega_3^3\omega_3^2 - 144v_1^4\omega_4^2\omega_1^2\omega_2^2\omega_3 - 36\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 + 24\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 108v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 - 72\omega_4c_s^2\omega_1\omega_2^3\omega_3^2 + 108v_1^4\omega_4\omega_1^3\omega_3^3\omega_3 - 432v_1^2\omega_4^2v_2^2\omega_3^2\omega_3^2 + 72v_1^2\omega_4\omega_1\omega_2^3\omega_3^2 + 36v_1^2\omega_4^2\omega_1^3\omega_2^2 + 144v_1^2\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 + 648v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 - 108v_1^2\omega_4\omega_1^3\omega_2^3\omega_3 + 240v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 16\omega_4^2\omega_1\omega_2^3\omega_3^2 - 297v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 - 12\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 + 24v_1^4\omega_4^2\omega_1^3\omega_2^3\omega_3^2 + 192v_1^4\omega_4^2\omega_2^3\omega_3^2 - 852v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 - 24v_1^4\omega_4^2\omega_1\omega_2^3\omega_3 + 24\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 72v_1^4\omega_4^2\omega_1^2\omega_3^2 + 16\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 + 96v_1^4\omega_4^2\omega_1^2\omega_2\omega_3^2 + 12\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^3\omega_3^2 - 36\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 80\omega_4^2c_s^4\omega_2^3\omega_3^2 - 24v_1^2\omega_4^2\omega_1^3\omega_2^3\omega_3^2 - 144v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 108v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 + 24v_1^2\omega_4^2\omega_1\omega_3^2\omega_3 + 36\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 54v_1^4\omega_1^3\omega_3^2\omega_3^2 + 18\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 + 108v_1^2\omega_1^2\omega_3^2\omega_3^2 + 72\omega_4c_s^2\omega_1^2\omega_3^2 + 2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 + 96v_1^4\omega_4^2\omega_1\omega_2^2\omega_3^2 + 16\omega_4^2c_s^4\omega_1\omega_3^2\omega_3 - 48\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 - 56\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2 + 48\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 + 288v_1^4\omega_4\omega_1^2\omega_2^3\omega_3^2 + 168v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 6\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3^2 + 108v_1^4\omega_4^2\omega_1^3\omega_2^2\omega_3 + 324v_1^2\omega_4c_s^2\omega_1^3\omega_2^3\omega_3 - 144v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 + 144v_1^2\omega_4^2v_2^2\omega_1^3\omega_3^2 - 216v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 108v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3 - 288v_1^2\omega_4\omega_1^2\omega_3^2\omega_3^2 - 288v_1^2\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 432v_1^2\omega_4^2c_s^2\omega_2^3\omega_3^2 - 108v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2 - 297v_1^2\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2 - 86v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 12\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 180v_1^2\omega_4\omega_1^2\omega_3^3\omega_3 + 336v_1^2\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 96v_1^2\omega_4^2\omega_1^3\omega_3^2 + 8\omega_4^2c_s^2\omega_2^3\omega_3^2 + 24\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 172\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 + 54v_1^4\omega_4^2\omega_1^3\omega_3^2 + 288v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 24\omega_4^2v_2^2\omega_1^3\omega_3^2 + 16\omega_4^2\omega_1\omega_2^2\omega_3^2 - 180v_1^4\omega_4\omega_1^2\omega_2^3\omega_3 + 24\omega_4^2c_s^2v_2^2\omega_2^3\omega_3^2 - 6\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 38v_1^4\omega_4^2\omega_1^3\omega_2^2\omega_3^2 + 18\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 + 117v_1^2\omega_4^2\omega_1^3\omega_2^3\omega_3 + 36\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 + 72\omega_4c_s^4\omega_1\omega_2^3\omega_3^2 - 144v_1^2\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 8\omega_4^2\omega_1^3\omega_3^2 + 36v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2 + 96v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 - 16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 - 108v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 + 162v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 - 288v_1^2\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 + 72v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2 - 36v_1^4\omega_4\omega_1^2\omega_2^2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2\omega_3^2 - 117v_1^4\omega_4^2\omega_1^3\omega_3^2\omega_3 + 48\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3 - 2\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 + 162v_1^2c_s^2\omega_1^3\omega_3^2\omega_3^2 + 72v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 - 36v_1^4\omega_4^2\omega_1^3\omega_2^2 + 264v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 72\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 - 48\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2 - 288v_1^4\omega_4^2\omega_1\omega_2^3\omega_3^2$

$C_{25} = 24\omega_4^2v_2^2\omega_2^3\omega_3^2 + 28\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 216\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 - 52\omega_4^2c_s^2\omega_1^3\omega_3^2 - 4v_1^2\omega_4^2\omega_2^3\omega_3^2 - 102\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 9\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2 + 54c_s^4\omega_1^3\omega_2^2\omega_3^2 - 119\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 + 16v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 36c_s^2\omega_1^2\omega_3^3\omega_3^2 - 3\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 108\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 - 30v_1^2\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2 + 4\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 36\omega_4^2v_2^4\omega_1\omega_2^2\omega_3^2 + 4v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 + 28\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 27\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 96\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 + 36v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 + 66\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 + 4\omega_4^2\omega_2^3\omega_3^2 - 4v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 24\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 60\omega_4^2v_2^4\omega_2^2\omega_3^2 + 324\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 - 4\omega_4^2\omega_1^3\omega_2\omega_3^2 - 32v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 72\omega_4^2c_s^4\omega_1^3\omega_3^2 - 20v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 36v_1^2c_s^2\omega_1^2\omega_3^3\omega_3^2 + 9\omega_4^2c_s^2\omega_1^3\omega_3^2\omega_3 + 27\omega_4^2v_2^4\omega_1^3\omega_2^2\omega_3^2 - 12v_1^2\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 58\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 138\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 - 12\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 16v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 + 108\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 - 24\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 32v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3 + 36v_1^2\omega_4^2v_2^2\omega_2^3\omega_3^2 - 48v_1^2\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 + 36v_1^2\omega_4c_s^2\omega_1^2\omega_3^3\omega_3^2 + 72\omega_4^2v_2^4\omega_1\omega_2^3\omega_3^2 - 25\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 8v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 4\omega_4^2\omega_1\omega_2^3\omega_3^2 - 9v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 - 324\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2 + 4v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 12\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 72\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 - 138\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 + 49\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 - 18c_s^2\omega_1^3\omega_3^2\omega_3^2 - 72\omega_4^2c_s^4\omega_1^2\omega_3^2 + 4v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 74\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 24\omega_4^2v_2^4\omega_1^3\omega_3^2 - 27\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_3^3\omega_3^2 - 84\omega_4^2c_s^4\omega_1\omega_2^3\omega_3 + 12\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 + 8v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 12\omega_4^2c_s^2\omega_1^3\omega_3^2 + 15\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3^2 - 108c_s^4\omega_1^2\omega_3^2\omega_3^2 - 36\omega_4^2v_2^4\omega_1^3\omega_2\omega_3^2 + 4v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 + 24v_1^2\omega_4^2v_2^2\omega_1^3\omega_3^2 - 24v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 32\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 27\omega_4^2v_2^4\omega_1^2\omega_2^3\omega_3^2 + 60v_1^2\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 16v_1^2\omega_4^2c_s^2\omega_2^3\omega_3^2 - 12v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2 - 9v_1^2\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2 + 54\omega_4^2c_s^4\omega_1^3\omega_3^2 - 16\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 28v_1^2\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 4v_1^2\omega_4^2\omega_1^3\omega_3^2 + 20\omega_4^2c_s^2\omega_3^2\omega_3^2 + 78\omega_4^2c_s^4\omega_1\omega_3^2\omega_3^2 - 48\omega_4^2v_2^2\omega_1^3\omega_3^2 - 4\omega_4^2\omega_1\omega_2^2\omega_3^2 - 216\omega_4^2c_s^2v_2^2\omega_3^2\omega_3^2 - 27\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 24\omega_4^2c_s^2\omega_1^2\omega_3^2 - 27\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 - 36\omega_4^2v_2^4\omega_1^2\omega_2^2\omega_3^2 - 36\omega_4^2c_s^2\omega_2^2\omega_3^2\omega_3 + 4\omega_4^2\omega_1^3\omega_3^2 + 4v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 + 4\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 18v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 - 30v_1^2\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2 + 3v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 4\omega_4^2\omega_1^2\omega_2\omega_3^2 + 35\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 + 18v_1^2c_s^2\omega_1^3\omega_3^2\omega_3^2 - 28v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 - 4v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 - 42\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2$

$C_{26} = 56\omega_4c_s^4\omega_1^2\omega_2^2\omega_3 + 12v_1^2\omega_4\omega_1^2\omega_2\omega_3^2 + 9\omega_4v_2^2\omega_1^2\omega_2^3\omega_3^2 + 24\omega_4v_2^4\omega_1^3\omega_3^2 - 126v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 + 30\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 66\omega_4v_2^2\omega_1^3\omega_2\omega_3^2 - 68\omega_4c_s^4\omega_2^3\omega_3^2 + 54c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 24v_1^2\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 18v_2^4\omega_1^2\omega_2^3\omega_3^2 + 36\omega_4v_2^4\omega_1^3\omega_2^2\omega_3 - 90v_1^2\omega_4v_2^2\omega_1\omega_2^3\omega_3^2 + 18c_s^4\omega_1^3\omega_2^3\omega_3^2 + 18v_2^2\omega_1^3\omega_2^2\omega_3 - 4\omega_4\omega_1\omega_2^3\omega_3^2 - 8\omega_4c_s^2\omega_1\omega_2^3\omega_3 - 12v_1^2\omega_4\omega_1^3\omega_3^2 + 32\omega_4c_s^2\omega_1^2\omega_2\omega_3^2 + 12\omega_4v_2^4\omega_1\omega_2^2\omega_3^2 - 14\omega_4c_s^4\omega_1^3\omega_2\omega_3^2 + 72c_s^2\omega_1^2\omega_2^3\omega_3^2 - 96v_1^2\omega_4c_s^2\omega_2^3\omega_3^2 + 150\omega_4c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 - 14\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 + 72v_1^2\omega_4v_2^2\omega_1^3\omega_3^2 + 54c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 + 12v_1^2\omega_4\omega_1\omega_2^2\omega_3^2 - 6\omega_4v_2^2\omega_1^2\omega_2^2\omega_3 + 4\omega_4\omega_1^3\omega_3^2 + 66v_1^2\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 + 32\omega_4c_s^2\omega_1\omega_2^2\omega_3^2 + 12\omega_4v_2^4\omega_1^2\omega_2\omega_3^2 + 132\omega_4c_s^2v_2^2\omega_1^3\omega_3^2 + 6\omega_4v_2^4\omega_1\omega_3^2\omega_3 + 36\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 4\omega_4\omega_1\omega_2^2\omega_3^2 - 48\omega_4v_2^2\omega_1^3\omega_3^2 - 144v_1^2\omega_4v_2^2\omega_1\omega_2^2\omega_3^2 + 54\omega_4v_2^4\omega_1\omega_3^2\omega_3^2 + v_1^4\omega_4\omega_1^3\omega_2^2\omega_3^2 - 18v_2^2\omega_1\omega_3^2\omega_3^2 + 28\omega_4c_s^2\omega_3^2\omega_3^2 - 2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 - 216v_1^2c_s^2\omega_1^2\omega_3^2\omega_3^2 + 8\omega_4c_s^4\omega_1^3\omega_2\omega_3 - v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2 - 18v_2^4\omega_1^2\omega_3^2\omega_3^2 - 12c_s^2\omega_1^2\omega_2^2\omega_3^2 - 42\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2 - 36\omega_4c_s^4\omega_1^2\omega_3^2\omega_3 + 132v_1^2\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 + 72c_s^4\omega_1\omega_2^3\omega_3^2 + 9\omega_4v_2^4\omega_1^3\omega_2^2\omega_3^2 - 18\omega_4c_s^2\omega_1^3\omega_3^2\omega_3 - 18v_2^2\omega_1^3\omega_2^2\omega_3^2 - 36v_1^2\omega_4v_2^2\omega_1^2\omega_2\omega_3^2 - 4\omega_4\omega_1^2\omega_2\omega_3^2 - 18\omega_4c_s^2\omega_1\omega_3^2\omega_3^2 + 36\omega_4v_2^2\omega_1^2\omega_3^2\omega_3 + 12v_1^2\omega_4\omega_1\omega_3^2\omega_3^2 + 28\omega_4c_s^4\omega_1^2\omega_2^2\omega_3^2 - 6v_1^2\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 + 90\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 54c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 + 12\omega_4v_2^2\omega_1^3\omega_2\omega_3 + 18v_2^4\omega_1^2\omega_3^2\omega_3 - 12\omega_4c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 - 6v_1^2\omega_4c_s^2\omega_1^3\omega_2\omega_3^2 + 216v_1^2c_s^2\omega_1\omega_3^2\omega_3^2 - 36\omega_4v_2^4\omega_1^3\omega_2\omega_3^2 + 18v_2^2\omega_1^2\omega_3^2\omega_3^2 - 9\omega_4v_2^4\omega_1^2\omega_3^2\omega_3^2 - 56\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2^2\omega_3^2 + 180v_1^2\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2 - 18v_2^4\omega_1^3\omega_2^2\omega_3 - 20\omega_4c_s^2\omega_1^3\omega_3^2 - 36\omega_4c_s^2v_2^2\omega_1^3\omega_2\omega_3 - 18c_s^2\omega_1^3\omega_3^2\omega_3^2 - 18\omega_4v_2^2\omega_1^2\omega_3^2 + 36\omega_4v_2^2\omega_1\omega_2^2\omega_3^2 + 54c_s^2v_2^2\omega_1^2\omega_3^2\omega_3 - 28\omega_4c_s^4\omega_1^2\omega_2\omega_3^2 - 54\omega_4c_s^2v_2^2\omega_1^3\omega_2^2 + 8\omega_4c_s^4\omega_1\omega_3^2\omega_3 - 90\omega_4c_s^2v_2^2\omega_1^2\omega_3^2\omega_3 + 6v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 + 12\omega_4v_2^2\omega_3^2\omega_3^2 - 36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3 - 3\omega_4c_s^4\omega_1^3\omega_2^3\omega_3^2 + 6\omega_4v_2^4\omega_1^2\omega_2^2\omega_3 + 2\omega_4c_s^2\omega_1^2\omega_3^2 - 18\omega_4v_2^4\omega_1^2\omega_2^2 + 18\omega_4c_s^2\omega_1^3\omega_2^3 - 72c_s^4\omega_1^2\omega_3^2\omega_3^2 + 24\omega_4c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 + 54v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 - 36\omega_4c_s^4\omega_1^3\omega_3^2\omega_3 + 12v_1^2\omega_4\omega_1^3\omega_2\omega_3^2 + 48v_1^2\omega_4c_s^2\omega_1\omega_2^2\omega_3^2 + 18\omega_4c_s^2\omega_1^3\omega_3^2 - 6\omega_4v_2^2\omega_1\omega_3^2\omega_3 + v_1^2\omega_4\omega_1^2\omega_2^3\omega_3^2 - 54c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 28\omega_4c_s^4\omega_1\omega_2^2\omega_3^2 + 54\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 + 18v_2^4\omega_1\omega_3^2\omega_3^2 - 12v_1^2\omega_4\omega_3^2\omega_3^2 + 2\omega_4c_s^4\omega_1^3\omega_2^2\omega_3^2 - 48v_1^2\omega_4c_s^2\omega_1^2\omega_2\omega_3^2 + 60v_1^2\omega_4c_s^2\omega_1\omega_3^2\omega_3 - 24\omega_4v_2^2\omega_1\omega_2^2\omega_3^2 + 36\omega_4c_s^2\omega_1^2\omega_3^2\omega_3 + 18\omega_4v_2^4\omega_1^2\omega_3^2 - 18\omega_4v_2^4\omega_1^2\omega_2^2\omega_3^2 + 16\omega_4c_s^4\omega_1^3\omega_3^2 - 48\omega_4v_2^4\omega_2^2\omega_3^2 - 8\omega_4c_s^4\omega_1^3\omega_2\omega_3 - 4\omega_4\omega_1^3\omega_2\omega_3^2 + 18v_2^2\omega_1^2\omega_2^2\omega_3^2 - 90v_1^2\omega_4v_2^2\omega_1^3\omega_2\omega_3^2 + 54\omega_4c_s^2v_2^2\omega_1^2\omega_3^2 - 174\omega_4c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 + 18\omega_4v_2^2\omega_1^3\omega_3^2 + 18v_2^4\omega_1^3\omega_2^2\omega_3^2 - 84v_1^2\omega_4c_s^2\omega_1\omega_2^2\omega_3^2 + 76\omega_4c_s^4\omega_1\omega_3^2\omega_3^2 - 54c_s^2v_2^2\omega_1^2\omega_3^3\omega_3^2 - 24v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2 - 72c_s^2\omega_1\omega_3^2\omega_3^2 - 108\omega_4c_s^2v_2^2\omega_3^2\omega_3^2 - 30\omega_4c_s^2v_2^2\omega_1^2\omega_3^3\omega_3^2 - 90v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 + 18\omega_4c_s^4\omega_1^3\omega_3^3\omega_3 - 9\omega_4v_2^2\omega_1^3\omega_2^2\omega_3^2 - 12\omega_4v_2^4\omega_1^3\omega_2\omega_3 - 18v_2^2\omega_1^2\omega_3^3\omega_3 + 108v_1^2\omega_4v_2^2\omega_3^2\omega_3^2 + 4\omega_4\omega_3^2\omega_3^2 + 54v_1^2c_s^2\omega_1^3\omega_3^2\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 + 12v_1^2\omega_4c_s^2\omega_1^3\omega_3^2 - 36\omega_4v_2^4\omega_1^2\omega_2^3\omega_3$

$C_{27} = -18c_s^2\omega_1^3\omega_2 - 23\omega_1^3\omega_2^2\omega_3 + 50v_2^2\omega_1^3\omega_2^2\omega_3 - 9v_1^2\omega_1\omega_2^3\omega_3 + 36c_s^2\omega_1^2\omega_2^2 - 60\omega_1\omega_2^3\omega_3 + 6\omega_1\omega_2^2 + 141v_2^2\omega_1\omega_2^3\omega_3 + 12v_1^2\omega_2^3\omega_3 - 6v_1^2\omega_1^3\omega_2 - 12v_1^2\omega_1\omega_2^2\omega_3 + 6v_2^2\omega_1^2\omega_2\omega_3 - 42c_s^2\omega_1^2\omega_2^3\omega_3 + 6\omega_1^2\omega_2\omega_3 - 108c_s^2\omega_1^3\omega_2\omega_3 + 60v_2^2\omega_1\omega_2^2\omega_3 + 12v_1^2\omega_1^2\omega_2^2 - 12v_1^2\omega_1^2\omega_2\omega_3 - 12\omega_1\omega_2^2\omega_3 + 48v_2^2\omega_1^3\omega_3 - 36\omega_1^3\omega_3 - 66c_s^2\omega_2^3\omega_3 + 18v_1^2\omega_1^2\omega_2^2\omega_3 + 108c_s^2\omega_1\omega_2^3\omega_3 + 84c_s^2\omega_1^3\omega_3 - 6v_1^2\omega_1\omega_2^3 + 42\omega_2^3\omega_3 - 114v_2^2\omega_2^3\omega_3 - 66v_2^2\omega_1^2\omega_2^2\omega_3 + 42c_s^2\omega_1^3\omega_2^2\omega_3 +$

$12\omega_1^2\omega_2^2\omega_3 - 9v_1^2\omega_1^3\omega_2\omega_3 + 6\omega_1^3\omega_2 - 18c_s^2\omega_1\omega_2^3 + 12v_1^2\omega_1^3\omega_3 + 23\omega_1^2\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2\omega_3 + 48\omega_1^3\omega_2\omega_3 - 12\omega_1^2\omega_2^2 - 50v_2^2\omega_1^2\omega_2^3\omega_3 - 75v_2^2\omega_1^3\omega_2\omega_3$

$C_{28} = 160\omega_4^2v_2^2\omega_2^3\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 120\omega_4^2v_4^2\omega_1^2\omega_2\omega_3^2 + 320\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 - 104\omega_4^2c_s^2\omega_1^3\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 36\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 276\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 9\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2 - 56\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 + 54c_s^4\omega_1^3\omega_2^3\omega_3^2 - 342\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 + 6v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 36c_s^2\omega_1^2\omega_2^3\omega_3^2 - 6\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2 + 108\omega_4c_s^4\omega_1^2\omega_2^2\omega_3^2 - 88\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 - 24\omega_4^2v_2^4\omega_1\omega_2^2\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 - 56\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3 + 92\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 120\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 + 448\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3^2 - 6v_1^4\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 6\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 + 152\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2\omega_2^3\omega_3^2 + 12\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 144\omega_4^2v_2^4\omega_2^3\omega_3^2 + 1232\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 - 20\omega_4^2\omega_1^3\omega_2\omega_3^2 - 18v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 - 9\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^3\omega_3 + 144\omega_4^2c_s^4\omega_1^3\omega_3^2 - 14\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 18c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 + 9\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 + 78\omega_4^2v_2^4\omega_1^3\omega_2^2\omega_3^2 - 9\omega_4c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 - 368\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 394\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 + 48\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 216\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 + 104\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 228\omega_4^2v_2^4\omega_1\omega_2^3\omega_3^2 - 118\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 28\omega_4^2\omega_1\omega_2^3\omega_3^2 - 712\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 108\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2 + 18\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 - 136\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 144\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 - 460\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 184\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 - 288\omega_4^2c_s^4\omega_2^3\omega_3^2 - 18c_s^2\omega_1^3\omega_2^3\omega_3^2 - 108\omega_4^2c_s^4\omega_1^2\omega_3^2 + 208\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 48\omega_4^2v_2^4\omega_1^3\omega_3^2 - 27\omega_4c_s^4\omega_1^3\omega_2^3\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 + 14\omega_4^2\omega_1^3\omega_2^3\omega_3^2 - 168\omega_4^2c_s^4\omega_1\omega_2^3\omega_3 + 32\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 + 72\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2 + 40\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 + 18v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 18\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3^2 - 108c_s^4\omega_1^2\omega_2^3\omega_3^2 - 132\omega_4^2v_4^2\omega_1^3\omega_2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 78\omega_4^2v_4^2\omega_1^2\omega_2^3\omega_3^2 + 54\omega_4^2c_s^4\omega_1^3\omega_3^2 - 6v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 52\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 36\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2 + 208\omega_4^2c_s^2\omega_3^3\omega_3^2 - 412\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 588\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 - 56\omega_4^2v_2^2\omega_1^3\omega_3^2 - 8\omega_4^2\omega_1\omega_2^2\omega_3^2 - 784\omega_4^2c_s^2v_2^2\omega_2^3\omega_3^2 - 92\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^2\omega_3^2 + 6v_1^4\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 27\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3 - 96\omega_4^2v_4^2\omega_1^2\omega_2^2\omega_3^2 - 72\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 - 36c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 8\omega_4^2\omega_1^3\omega_3^2 - 16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 36\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 16\omega_4^2\omega_1^2\omega_2\omega_3^2 + 16\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3 + 144\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 + 72\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 - 256\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2$

$C_{29} = 6\omega_4v_2^2\omega_1\omega_2\omega_3 - 18v_1^2\omega_4\omega_2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 - 9\omega_4v_2^2\omega_1\omega_2 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 4\omega_4v_2^2\omega_2\omega_3 + 12\omega_4c_s^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_2\omega_3 - 9v_2^2\omega_1\omega_2\omega_3 + 2\omega_4v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4c_s^2\omega_1\omega_2\omega_3 + 18v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{30} = 10\omega_4c_s^4\omega_1^2\omega_2^2\omega_3 - 18\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_4c_s^4\omega_1^3\omega_2 + 24\omega_4c_s^2v_2^2\omega_1\omega_2^3 - 3v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 - 60\omega_4c_s^2v_2^2\omega_1\omega_2^2\omega_3 + 36c_s^4\omega_1\omega_2^3\omega_3 + 138\omega_4v_2^4\omega_1^3\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 - 54\omega_4c_s^2\omega_1\omega_2^3\omega_3 - 9\omega_4c_s^2\omega_1^3\omega_2^3 - v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 + 27c_s^2v_2^2\omega_1^3\omega_2^3\omega_3 + 120\omega_4c_s^2v_2^2\omega_1^2\omega_2\omega_3 + 84\omega_4v_2^2\omega_1^2\omega_2^2\omega_3 + 20\omega_4c_s^4\omega_1^2\omega_2^2 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 60\omega_4v_2^2\omega_1^3\omega_3 - 4\omega_4\omega_1\omega_2^2\omega_3 + v_1^4\omega_4\omega_1^3\omega_2^2\omega_3 + 408\omega_4v_2^4\omega_1\omega_2^3\omega_3 - 24\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 + 40\omega_4c_s^2\omega_3^3\omega_3 - 8\omega_4c_s^2\omega_1^3\omega_2 + 18\omega_4c_s^2\omega_1^2\omega_2^3 + 144\omega_4c_s^2v_2^2\omega_1^3\omega_3 + 192\omega_4v_2^4\omega_1^2\omega_2\omega_3 + 32\omega_4c_s^2\omega_1\omega_2^2\omega_3 + 7\omega_4\omega_1^3\omega_2^2\omega_3 - 32\omega_4c_s^4\omega_1^3\omega_2\omega_3 + 432\omega_4c_s^2v_2^2\omega_1\omega_2^3\omega_3 + 36c_s^2\omega_1^2\omega_2^3\omega_3 + 4\omega_4\omega_1^3\omega_3 + 108c_s^2v_2^2\omega_1\omega_2^3\omega_3 + 9\omega_4c_s^4\omega_1^3\omega_2^3 - 29\omega_4c_s^4\omega_1^2\omega_2^3\omega_3 + 14\omega_4\omega_1\omega_2^3\omega_3 - 20\omega_4c_s^2\omega_1^2\omega_2^2 + 9c_s^4\omega_1^3\omega_2^3\omega_3 - 24\omega_4v_2^4\omega_1\omega_2^2\omega_3 - 16\omega_4c_s^2\omega_1^2\omega_2\omega_3 + 81\omega_4v_2^2\omega_1^2\omega_2^3\omega_3 + 153\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 + 96\omega_4v_2^4\omega_1^3\omega_3 - 18\omega_4c_s^4\omega_1^3\omega_2^2 - 68\omega_4c_s^4\omega_2^3\omega_3 + 138\omega_4v_2^2\omega_1^3\omega_2\omega_3 - 8\omega_4\omega_2^3\omega_3 - 6\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 - 288\omega_4c_s^2v_2^2\omega_1^3\omega_2\omega_3 - 108c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 - 54\omega_4c_s^2v_2^2\omega_1^3\omega_2^2 + 94\omega_4c_s^4\omega_1\omega_2^3\omega_3 - 153\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 - 36c_s^2\omega_1\omega_2^3\omega_3 - 312\omega_4c_s^2v_2^2\omega_2^3\omega_3 - 81\omega_4v_2^2\omega_1^3\omega_2^2\omega_3 - 168\omega_4v_2^4\omega_1^2\omega_2^2\omega_3 - 8\omega_4c_s^2\omega_1\omega_2^3 - 7\omega_4\omega_1^2\omega_2^3\omega_3 + 16\omega_4c_s^4\omega_1^3\omega_3 - 264\omega_4v_2^4\omega_2^3\omega_3 - 10\omega_4\omega_1^3\omega_2\omega_3 + 17\omega_4c_s^4\omega_1^3\omega_2^2\omega_3 + 27\omega_4c_s^2v_2^2\omega_1^3\omega_2^2 - 222\omega_4v_2^2\omega_1\omega_2^3\omega_3 - 90\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 - 28\omega_4c_s^4\omega_1\omega_2^2\omega_3 - 96\omega_4v_2^2\omega_1^2\omega_2\omega_3 + 60\omega_4c_s^2v_2^2\omega_1^2\omega_2^2 + v_1^2\omega_4\omega_1^2\omega_2^3\omega_3 + 24\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 - v_1^4\omega_4\omega_1^2\omega_2^3\omega_3 + 42\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 36c_s^4\omega_1^2\omega_2^3\omega_3 - 54\omega_4c_s^2v_2^2\omega_1^2\omega_2^3 - 9c_s^2\omega_1^3\omega_2^3\omega_3 - 20\omega_4c_s^2\omega_1^3\omega_3 + 24\omega_4c_s^2v_2^2\omega_1^3\omega_2 + 8\omega_4c_s^4\omega_1^2\omega_2\omega_3 + 8\omega_4c_s^4\omega_1\omega_2^3 + 12\omega_4v_2^2\omega_1\omega_2^2\omega_3 + 3v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 - 3\omega_4c_s^4\omega_1^3\omega_2^3\omega_3 + 144\omega_4v_2^2\omega_2^3\omega_3 - 240\omega_4v_2^4\omega_1^3\omega_2\omega_3 - 138\omega_4v_2^4\omega_1^2\omega_2^3\omega_3 - 4\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{31} = 12v_2^4\omega_2 - 2c_s^2\omega_1 - 9v_2^4\omega_1\omega_2 - 6v_2^2\omega_1 + 4c_s^4\omega_2 + 9v_2^2\omega_1\omega_2 + 48c_s^2v_2^2\omega_2 + 2c_s^4\omega_1 + 24c_s^2v_2^2\omega_1 - 12v_2^2\omega_2 + 3c_s^2\omega_1\omega_2 - 4c_s^2\omega_2 - 36c_s^2v_2^2\omega_1\omega_2 + 6v_2^4\omega_1 - 3c_s^4\omega_1\omega_2$

$C_{32} = -9v_2^2\omega_1^3\omega_3^2 - 15\omega_4v_2^4\omega_1^3\omega_3^2 + 6\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 + \omega_4^2c_s^2\omega_1^3\omega_3^2 + 24\omega_4^2c_s^4\omega_1^2\omega_3^2 + 27\omega_4^2c_s^2v_2^2\omega_1^3 - 36\omega_4v_2^2\omega_1^2\omega_3^2 - 18v_2^4\omega_1^2\omega_3^2 - 108\omega_4c_s^2v_2^2\omega_1^2\omega_3 + 12\omega_4^2c_s^2\omega_1^2\omega_3 - 36\omega_4v_2^4\omega_1^2\omega_3 - 12\omega_4c_s^2\omega_1\omega_3^2 + 72\omega_4^2c_s^2v_2^2\omega_1^2\omega_3 - 18\omega_4v_2^2\omega_1^3\omega_3 - 36\omega_4c_s^2v_2^2\omega_1^3\omega_3^2 - 54\omega_4^2c_s^2v_2^2\omega_1^2 + 3\omega_4^2c_s^4\omega_1^3\omega_3 + 15\omega_4v_2^2\omega_1^3\omega_3^2 + 54\omega_4c_s^2v_2^2\omega_1^3\omega_3 + 9v_2^4\omega_1^3\omega_3^2 - 3\omega_4^2c_s^4\omega_1^3\omega_3^2 + 24\omega_4^2c_s^4\omega_3^2 - 8\omega_4^2c_s^2\omega_1^2\omega_3^2 + 18v_2^2\omega_1^2\omega_3^2 + 9\omega_4^2v_2^4\omega_1^3 - 12\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2 + 36\omega_4v_2^4\omega_1^2\omega_3^2 - 12\omega_4^2c_s^4\omega_1^2\omega_3 + 12\omega_4c_s^4\omega_1\omega_3^2 + 36\omega_4v_2^2\omega_1^2\omega_3 + 72\omega_4c_s^2v_2^2\omega_1^2\omega_3^2 - 36\omega_4^2c_s^2v_2^2\omega_1^3\omega_3 - 18\omega_4^2v_2^4\omega_1^2 + 18\omega_4v_2^4\omega_1^3\omega_3 - 3\omega_4^2c_s^2\omega_1^3\omega_3 + 12\omega_4^2c_s^4\omega_1\omega_3 + 12\omega_4^2v_2^2\omega_1^2\omega_3^2 + 36\omega_4c_s^2v_2^2\omega_1\omega_3^2 - 12\omega_4c_s^4\omega_1^2\omega_3^2 - 3\omega_4c_s^2\omega_1^3\omega_3^2 + 3\omega_4^2v_2^2\omega_1^3\omega_3^2 + 15\omega_4^2v_2^2\omega_1^3\omega_3 + 27c_s^2v_2^2\omega_1^3\omega_3^2 + 36\omega_4^2v_2^2\omega_1^2\omega_3 + 12\omega_4^2c_s^2\omega_1\omega_3^2 - 36\omega_4^2c_s^2v_2^2\omega_1\omega_3^2 - 12\omega_4^2v_2^4\omega_1^2\omega_3^2 - 12\omega_4^2c_s^2\omega_1\omega_3 + 36\omega_4^2c_s^2v_2^2\omega_1\omega_3 + 12\omega_4c_s^2\omega_1^2\omega_3^2 + 3\omega_4c_s^4\omega_1^3\omega_3^2 + 18\omega_4^2v_2^2\omega_1^2 - 3\omega_4^2v_2^2\omega_1^3\omega_3^2 - 54c_s^2v_2^2\omega_1^2\omega_3^2 - 15\omega_4^2v_2^4\omega_1^3\omega_3 - 48\omega_4^2c_s^4\omega_1\omega_3^2 - 36\omega_4^2v_2^2\omega_1^2\omega_3 - 9\omega_4^2v_2^2\omega_1^3$

$C_{33} = 8\omega_1\omega_2^2\omega_3^2 - 12c_s^2\omega_1^2\omega_2^3 + 48v_1^4\omega_2^3\omega_3^2 + 4\omega_1^3\omega_3^2 + 4c_s^2\omega_1^2\omega_2^2\omega_3 + 20c_s^2\omega_2^3\omega_3^2 + 24c_s^4\omega_1\omega_2^3\omega_3 - 36c_s^4\omega_1^2\omega_2\omega_3^2 + 216v_1^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 22c_s^2\omega_1v_3^2\omega_2^3\omega_3^2 - 24v_1^2\omega_1^2\omega_2\omega_3^2 + 96v_1^2\omega_1v_3^2\omega_2^3\omega_3^2 - 36v_1^4\omega_1^3\omega_2\omega_3^2 + 5c_s^2\omega_1^2\omega_2^3\omega_3^2 - 4\omega_1^2\omega_2\omega_3^2 - 4c_s^2\omega_1^3v_3^2\omega_2\omega_3 + 56c_s^2\omega_1^3\omega_2\omega_3^2 - 8\omega_1v_3^2\omega_2^2\omega_3^2 + 54c_s^4\omega_1^3\omega_2^2\omega_3 - 4c_s^2\omega_1^2v_3^2\omega_2\omega_3^2 - 36c_s^4\omega_1^3\omega_2^2 + 48v_1^2\omega_1\omega_2^2\omega_3^2 + 24v_1^2\omega_1^2v_3^2\omega_2\omega_3^2 + 4\omega_1^3v_3^2\omega_2\omega_3^2 + 36c_s^4\omega_1^2\omega_3^2 + 6c_s^4\omega_1^3\omega_2^2\omega_3^2 + 24v_1^2\omega_1v_3^2\omega_2^2\omega_3^2 - 324v_1^2c_s^2\omega_1^3\omega_2\omega_3^2 - 12c_s^2\omega_1^3v_3^2\omega_2^2 - 36c_s^4\omega_2^3\omega_3^2 + 8c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 + 24v_1^2\omega_2^3\omega_3^2 - 24v_1^2\omega_1^3\omega_2^2\omega_3^2 - 72v_1^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 4\omega_1^2v_3^2\omega_2\omega_3^2 - 48v_1^2\omega_1^3v_3^2\omega_2\omega_3^2 + 18c_s^2\omega_1^2\omega_2^3\omega_3 + 8\omega_1\omega_2^3\omega_3^2 - 4\omega_1^3v_3^2\omega_3^2 + 4c_s^2\omega_1^3\omega_2\omega_3 - 72v_1^2v_3^2\omega_3^2\omega_3^2 - 20c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 + 42c_s^4\omega_1\omega_2^3\omega_3^2 + 8c_s^2\omega_1v_3^2\omega_3^2\omega_3 + 8v_3^2\omega_2^3\omega_3^2 - 60v_1^2\omega_1\omega_2^3\omega_3^2 + 24v_1^2\omega_1^3v_3^2\omega_3^2 + 12c_s^2\omega_1^3\omega_2^2 + 72v_1^4\omega_1^2\omega_2^2\omega_3^2 - 8\omega_1v_3^2\omega_2^3\omega_3^2 + \omega_1^3\omega_2^2\omega_3^2 - 34c_s^2\omega_1^2\omega_2^2\omega_3^2 + 108v_1^2c_s^2\omega_1\omega_2^3\omega_3^2 - 24v_1^2\omega_1^2v_3^2\omega_2^3\omega_3^2 - 12c_s^4\omega_1^2\omega_2^2\omega_3 - 2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2 - 48v_1^2\omega_1^3\omega_3^2 - \omega_1^2\omega_2^3\omega_3^2 + 72c_s^4\omega_1^3\omega_3^2 + 40c_s^2\omega_1^2\omega_2\omega_3^2 - 8c_s^2\omega_1\omega_2^3\omega_3 - 4\omega_1^3\omega_2\omega_3^2 + 24v_1^2\omega_1^2\omega_3^2\omega_3^2 + 72v_1^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 84c_s^4\omega_1^3\omega_2\omega_3^2 - 4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 + 84v_1^2\omega_1^3\omega_2\omega_3^2 - 6c_s^4\omega_1^2\omega_2^3\omega_3^2 + 24v_1^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 8c_s^2\omega_1\omega_2^2\omega_3 + 4\omega_1^2v_3^2\omega_2^2\omega_3^2 + 2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 18c_s^2\omega_1^3\omega_2^2\omega_3 - 72v_1^4\omega_1\omega_2^2\omega_3^2 - 5c_s^2\omega_1^3\omega_2^2\omega_3^2 + 18c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 - 4\omega_1^2\omega_2^2\omega_3^2 + 12c_s^2\omega_1^2v_3^2\omega_3^2 - 52c_s^2\omega_1^3\omega_3^2 + 24v_1^4\omega_1^3\omega_3^2 - 2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 12c_s^4\omega_1^3\omega_2\omega_3 - 8\omega_3^2\omega_3^2 - 216v_1^2c_s^2\omega_1\omega_2^2\omega_3^2 - 20c_s^2v_3^2\omega_3^2\omega_3^2 - \omega_1^3v_3^2\omega_2^2\omega_3^2 - 54c_s^4\omega_1^2\omega_2^3\omega_3 - 48v_1^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 36v_1^4\omega_1\omega_2^3\omega_3^2 + 216v_1^2c_s^2\omega_1^3\omega_3^2 - 22c_s^2\omega_1\omega_2^3\omega_3^2 + 16c_s^2\omega_1^3v_3^2\omega_3^2 + \omega_1^2v_3^2\omega_3^2\omega_3^2 + 42c_s^4\omega_1^2\omega_2^2\omega_3^2 - 24v_1^2\omega_1^2\omega_2^2\omega_3^2 - 18c_s^2\omega_1^2v_3^2\omega_2^2\omega_3$

$C_{34} = -18c_s^2\omega_1^3\omega_2 + 27\omega_1v_3^2\omega_2^3\omega_3 - 27c_s^2\omega_1^2\omega_2^3 - 5\omega_1^3\omega_2^2\omega_3 + 81c_s^2\omega_1^2\omega_2^2\omega_3 - 24v_3^2\omega_2^3\omega_3 - 66v_1^2\omega_1\omega_2^3\omega_3 + 6\omega_1^2v_3^2\omega_2\omega_3 + 12\omega_1^3v_3^2\omega_3 - 18c_s^2\omega_1^2\omega_2^2 + 3\omega_1\omega_2^3\omega_3 - 12\omega_1\omega_2^3 + 84v_1^2\omega_2^3\omega_3 - 120v_1^2\omega_1\omega_2^2\omega_3 - 6\omega_1^2v_3^2\omega_2^2 - 18\omega_1^3v_3^2\omega_2\omega_3 - 15c_s^2\omega_1^2\omega_2^3\omega_3 + 6\omega_1^2\omega_2\omega_3 + 6\omega_1v_3^2\omega_2^2\omega_3 - 108c_s^2\omega_1^3\omega_2\omega_3 - 9\omega_1^2v_3^2\omega_2^3 - 12v_1^2\omega_1^2\omega_2\omega_3 + 42\omega_1\omega_2^2\omega_3 + 27c_s^2\omega_1^3\omega_2^2 - 36\omega_1^3\omega_3 - 12c_s^2\omega_2^3\omega_3 + 132v_1^2\omega_1^2\omega_2^2\omega_3 - 6\omega_1^3v_3^2\omega_2 + 27c_s^2\omega_1\omega_2^3\omega_3 - 5\omega_1^2v_3^2\omega_2^3\omega_3 + 84c_s^2\omega_1^3\omega_3 - 12\omega_2^3\omega_3 + 5\omega_1^3v_3^2\omega_2^2\omega_3 - 9\omega_1^3\omega_2^2 + 12\omega_1v_3^2\omega_2^3 + 15c_s^2\omega_1^3\omega_2^2\omega_3 - 51\omega_1^2\omega_2^2\omega_3 - 54c_s^2\omega_1\omega_2^2\omega_3 - 9\omega_1^2v_3^2\omega_2^2\omega_3 - 66v_1^2\omega_1^3\omega_2\omega_3 + 6\omega_1^3\omega_2 + 9\omega_1^2\omega_2^2 + 36c_s^2\omega_1\omega_2^3 + 48v_1^2\omega_1^3\omega_3 + 5\omega_1^2\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2\omega_3 + 48\omega_1^3\omega_2\omega_3 + 6\omega_1^2\omega_2^2 + 9\omega_1^3v_3^2\omega_2^2$

$C_{35} = 24\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 32\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 540v_1^2\omega_4c_s^2\omega_1^2\omega_3^2\omega_3 + 72v_1^2\omega_4^2\omega_1^2\omega_2^3 - 40\omega_4^2c_s^2\omega_1^3\omega_3^2 + 117v_1^2\omega_4\omega_1^3\omega_2^3\omega_3^2 - 96\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3 + 60v_1^2\omega_4^2\omega_1^2\omega_2\omega_3 - 48v_1^2\omega_4^2\omega_3^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 28\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 18\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2 - 54v_1^2\omega_1^3\omega_3^2\omega_3^2 + 576v_1^2\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 + 86\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3^2 - 60v_1^4\omega_4^2\omega_1^2\omega_2^2\omega_3 - 117v_1^4\omega_4\omega_1^3\omega_3^2\omega_3^2 - 492v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 + 8v_1^2\omega_4^2\omega_1^2\omega_3^2\omega_3^2 + 48\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 - 72\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 - 108v_1^4\omega_1^2\omega_2^3\omega_3^2 + 64\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 204v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 - 108v_1^2\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 + 40\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 + 144v_1^2\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 + 40v_1^4\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 36v_1^4\omega_4\omega_1^3\omega_2^2\omega_3 + 468v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 - 12\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 - 108v_1^4\omega_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2\omega_3^2\omega_3^2 - 72v_1^2\omega_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 216v_1^4\omega_1^2\omega_4^2\omega_1^2\omega_3^2\omega_3 + 20\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 + 48\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3 - 8\omega_4^2\omega_1^3\omega_2\omega_3^2 + 174v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 + 36v_1^4\omega_4\omega_1^3\omega_2^2\omega_3^2 -$

$24v_1^4\omega_4^2\omega_1^3\omega_2\omega_3+144v_1^2\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2+32\omega_4^2c_s^4\omega_1^3\omega_3^2-492v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2-2\omega_4^2\omega_1^2\omega_2^3\omega_3^2-324v_1^2c_s^2\omega_1^2\omega_2^3\omega_3^2-36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2-18\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3-$
$216v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3+6\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3^2+48v_1^4\omega_4^2\omega_1^3\omega_3^2-96\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2-54v_1^2\omega_4^2\omega_1^3\omega_2^3+24v_1^2\omega_4^2\omega_1^3\omega_2\omega_3+48\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2+24\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2-$
$288v_1^2\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2+16\omega_4^2c_s^4\omega_1^3\omega_2\omega_3+264v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2-72v_1^4\omega_4\omega_1\omega_2^3\omega_3^2-144v_1^4\omega_4^2\omega_1^2\omega_2^2\omega_3^2-36\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3+24\omega_4^2c_s^2v_3^2\omega_2^3\omega_3^2-$
$108v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3-6\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2-72\omega_4c_s^2\omega_1\omega_2^3\omega_3^2+108v_1^4\omega_4\omega_1^3\omega_2^3\omega_3+72v_1^2\omega_4\omega_1\omega_2^3\omega_3^2+36v_1^2\omega_4^2\omega_1^3\omega_2^2+648v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2-$
$108v_1^2\omega_4\omega_1^3\omega_2^3\omega_3-12\omega_4^2c_s^2\omega_1v_3^2\omega_2^3\omega_3^2+240v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2-24\omega_4^2\omega_1^3v_3^2\omega_3^2+16\omega_4^2\omega_1\omega_2^3\omega_3^2-297v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3-36\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3+24v_1^4\omega_4^2\omega_1^3\omega_2^3\omega_3^2+$
$192v_1^4\omega_4^2\omega_2^3\omega_3^2+24\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2-852v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2-24v_1^4\omega_4^2\omega_1\omega_2^3\omega_3-72v_1^4\omega_4^2\omega_1^2\omega_2^3+16\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2-144v_1^2\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3^2+96v_1^4\omega_4^2\omega_1^2\omega_2\omega_3^2-$
$36\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2+80\omega_4^2c_s^4\omega_2^3\omega_3^2-24v_1^2\omega_4^2\omega_1^3\omega_2^3\omega_3^2+72\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3-144v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2+108v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2+24v_1^2\omega_4^2\omega_1\omega_2^3\omega_3+36\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2-$
$48\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2+54v_1^4\omega_1^3\omega_2^3\omega_3^2+18\omega_4c_s^4\omega_1^3\omega_2^3\omega_3^2+108v_1^2\omega_1^2\omega_2^3\omega_3^2-72\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3+72\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2+2\omega_4^2\omega_1^3\omega_2^2\omega_3^2+96v_1^4\omega_4^2\omega_1\omega_2^2\omega_3^2+$
$16\omega_4^2c_s^4\omega_1\omega_2^3\omega_3-56\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2+288v_1^4\omega_4\omega_1^2\omega_2^3\omega_3^2+168v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2-6\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3^2+108v_1^4\omega_4^2\omega_1^3\omega_2^2\omega_3+324v_1^2\omega_4c_s^2\omega_1^3\omega_2^3\omega_3-$
$144v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2+48\omega_4^2v_3^2\omega_2^3\omega_3^2-216v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3+144v_1^2\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2-40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3-108v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3+24\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2-$
$288v_1^2\omega_4\omega_1^2\omega_2^3\omega_3^2+432v_1^2\omega_4^2c_s^2\omega_2^3\omega_3^2-108v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2-48\omega_4^2\omega_1v_3^2\omega_2^3\omega_3^2-297v_1^2\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2-86v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2-12\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2+$
$48\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3+180v_1^2\omega_4\omega_1^2\omega_2^3\omega_3+336v_1^2\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2-12\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2-96v_1^2\omega_4^2\omega_1^3\omega_3^2+8\omega_4^2c_s^2\omega_2^3\omega_3^2-288v_1^2\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2-$
$172\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2+54v_1^4\omega_4^2\omega_1^3\omega_2^3+288v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3+16\omega_4^2\omega_1\omega_2^2\omega_3^2-432v_1^2\omega_4^2v_3^2\omega_2^3\omega_3^2-180v_1^4\omega_4\omega_1^2\omega_2^3\omega_3+38v_1^4\omega_4^2\omega_1^3\omega_2^2\omega_3^2+$
$18\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3+117v_1^2\omega_4^2\omega_1^3\omega_2^3\omega_3+36\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3+72\omega_4c_s^4\omega_1\omega_2^3\omega_3^2+24\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2+8\omega_4^2\omega_1^3\omega_3^2+36v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2+12\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2+$
$96v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2-16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3-108v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3+144v_1^2\omega_4^2\omega_1^3v_3^2\omega_3^2+162v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3+72v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2-36v_1^4\omega_4\omega_1^2\omega_2^2\omega_3^2-$
$8\omega_4^2\omega_1^2\omega_2\omega_3^2-117v_1^4\omega_4^2\omega_1^3\omega_2^3\omega_3-2\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2+162v_1^2c_s^2\omega_1^3\omega_2^3\omega_3^2+72v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3-36v_1^4\omega_4^2\omega_1^3\omega_2^2+264v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2-288v_1^4\omega_4^2\omega_1\omega_2^3\omega_3^2$

$C_{36} =$
$-18c_s^2\omega_1^3\omega_2+4v_2^2\omega_1^3-12\omega_1\omega_2^2-12v_1^2\omega_1^2\omega_2+2v_3^2\omega_2^3+36c_s^2\omega_1^2\omega_2^2-3v_2^2\omega_1\omega_2^3+4\omega_1^3v_3^2+6\omega_1\omega_2^3-6\omega_1^2v_3^2\omega_2+6\omega_1^2v_3^2\omega_2^2-72c_s^2\omega_1^2\omega_2+4v_1^2\omega_1^3-12\omega_1^3+$
$36c_s^2\omega_1^3+24\omega_1^2\omega_2-6v_2^2\omega_1^2\omega_2-3\omega_1^3v_3^2\omega_2+12v_1^2\omega_1\omega_2^2-3\omega_1v_3^2\omega_2^3-4v_1^2\omega_2^3+36c_s^2\omega_1\omega_2^2-3v_2^2\omega_1^3\omega_2+6\omega_1^3\omega_2-18c_s^2\omega_1\omega_2^3-12\omega_1^2\omega_2^2+2v_2^2\omega_2^3+6v_2^2\omega_1^2\omega_2^2$

$C_{37} = -36v_1^2\omega_4\omega_1^2\omega_2\omega_3^2-3\omega_4v_2^2\omega_1^3\omega_2\omega_3^2-6\omega_1^3\omega_2^2\omega_3+4\omega_4\omega_1^3v_3^2\omega_3^2-3\omega_4\omega_1^2v_3^2\omega_2^3\omega_3+3v_2^2\omega_1^3\omega_2^2\omega_3+6\omega_4\omega_1\omega_2^3\omega_3^2+6\omega_4c_s^2\omega_1\omega_2^3\omega_3+$
$12v_1^2\omega_4\omega_1^3\omega_3^2-36\omega_4c_s^2\omega_1^2\omega_2\omega_3^2+3\omega_4\omega_1^2v_3^2\omega_2^3+18c_s^2\omega_1^2\omega_2^3\omega_3^2+36v_1^2\omega_4\omega_1\omega_2^2\omega_3^2+4\omega_4v_3^2\omega_2^3\omega_3^2+\omega_4v_2^2\omega_1^2\omega_2^2\omega_3-12\omega_4\omega_1^3\omega_3^2+3\omega_4\omega_1^3v_3^2\omega_2^2\omega_3+$
$6\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2-18\omega_4c_s^2\omega_1^3\omega_2^2-12\omega_4c_s^2\omega_1\omega_2^2\omega_3^2+18\omega_4c_s^2\omega_1^3\omega_2^2\omega_3-4\omega_4\omega_1\omega_2^2\omega_3^2+4\omega_4v_2^2\omega_1^3\omega_3^2+\omega_4\omega_1^2v_3^2\omega_2^2\omega_3+18\omega_4c_s^2\omega_1^2\omega_2^3-3v_2^2\omega_1\omega_2^3\omega_3^2-$
$6\omega_4\omega_1^3\omega_2^2\omega_3+20\omega_4c_s^2\omega_2^3\omega_3^2-18c_s^2\omega_1^2\omega_2^3\omega_3+6\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2+6\omega_1\omega_2^3\omega_3^2-2\omega_4\omega_1\omega_2^3\omega_3-3v_2^2\omega_1^3\omega_2^2\omega_3^2+20\omega_4\omega_1^2\omega_2\omega_3^2-18\omega_4c_s^2\omega_1\omega_2^3\omega_3^2-$
$3\omega_4v_2^2\omega_1^2\omega_2^3\omega_3-3\omega_1v_3^2\omega_2^3\omega_3^2+6\omega_1^3\omega_2^2\omega_3^2-2\omega_4v_2^2\omega_1^3\omega_2\omega_3+18c_s^2\omega_1^2\omega_2^2\omega_3^2+\omega_4\omega_1v_3^2\omega_2^3\omega_3+3v_2^2\omega_1^2\omega_2^3\omega_3^2+6\omega_4\omega_1^3\omega_2^2+6\omega_4c_s^2\omega_1^2\omega_2^2\omega_3-$
$12\omega_4\omega_1^2\omega_2^2\omega_3^2+28\omega_4c_s^2\omega_1^3\omega_3^2-6\omega_1^2\omega_2^3\omega_3^2+3\omega_4v_2^2\omega_1^2\omega_2^3-4\omega_4v_2^2\omega_1\omega_2^2\omega_3^2+4\omega_4v_2^2\omega_2^3\omega_3^2+3\omega_4v_2^2\omega_1^3\omega_2^2\omega_3-3\omega_1^2v_3^2\omega_2^3\omega_3+6\omega_4\omega_1^2\omega_2^3\omega_3-$
$18\omega_4c_s^2\omega_1^3\omega_2\omega_3^2+3\omega_1^3v_3^2\omega_2^2\omega_3-4\omega_4\omega_1v_3^2\omega_2^2\omega_3^2+4\omega_4\omega_1^3\omega_2\omega_3+3\omega_1^2v_3^2\omega_2^2\omega_3^2+18c_s^2\omega_1^3\omega_2^2\omega_3-3\omega_4\omega_1^3v_3^2\omega_2\omega_3^2-3\omega_4\omega_1^3v_3^2\omega_2^2+\omega_4v_2^2\omega_1\omega_2^3\omega_3-$
$4\omega_4v_2^2\omega_1^2\omega_2\omega_3^2-12v_1^2\omega_4\omega_2^3\omega_3^2-18c_s^2\omega_1^3\omega_2^2\omega_3^2-2\omega_4\omega_1^3v_3^2\omega_2\omega_3-6\omega_1^2\omega_2^2\omega_3^2-3\omega_4v_2^2\omega_1\omega_2^3\omega_3^2-18\omega_4c_s^2\omega_1^2\omega_2^3\omega_3-4\omega_4\omega_1^2v_3^2\omega_2\omega_3^2-$
$12\omega_4c_s^2\omega_1^3\omega_2\omega_3-3\omega_1^3v_3^2\omega_2^2\omega_3^2+6\omega_4\omega_1^3\omega_2\omega_3^2+3v_2^2\omega_1^2\omega_2^2\omega_3^2-3\omega_4v_2^2\omega_1^3\omega_2^2+6\omega_1^2\omega_2^3\omega_3-18c_s^2\omega_1\omega_2^3\omega_3^2+3\omega_1^2v_3^2\omega_2^3\omega_3^2-3\omega_4\omega_1v_3^2\omega_2^3\omega_3^2-$
$3v_2^2\omega_1^2\omega_2^3\omega_3-4\omega_4\omega_2^3\omega_3^2+36\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2-6\omega_4\omega_1^2\omega_2^3-2\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{38} = -36\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2+72\omega_4^2v_2^2\omega_2^3\omega_3^2-72\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2+63\omega_4\omega_1^3v_3^2\omega_2^3\omega_3^2-72v_1^2\omega_4^2\omega_1^2\omega_2^3+336\omega_4^2c_s^2\omega_1^3\omega_3^2+12v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3+$
$48v_1^2\omega_4^2\omega_2^3\omega_3^2+54\omega_4^2\omega_1^3v_3^2\omega_2^3+324\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3+108\omega_4\omega_1^3\omega_2^3\omega_3-108\omega_4^2\omega_1^2\omega_2^2\omega_3^2+189\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2+54v_1^2\omega_1^3\omega_2^3\omega_3^2-36\omega_4\omega_1^2v_3^2\omega_2^3\omega_3-$
$36\omega_4\omega_1\omega_2^3\omega_3^2+72\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3+36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3-36\omega_4^2\omega_1^3v_3^2\omega_2^2+144\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3-144\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2-36v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2-36\omega_4^2c_s^2\omega_1\omega_2^3\omega_3+$
$36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3+36\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2+144\omega_4^2\omega_1^2\omega_2^3+48\omega_4^2\omega_1^3\omega_2\omega_3-108\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2+72\omega_4\omega_1^3\omega_2^2\omega_3^2+24\omega_4^2\omega_2^3\omega_3^2+216\omega_4c_s^2\omega_1^3\omega_2^2\omega_3-$
$108\omega_4^2\omega_1^2\omega_2^3\omega_3+72\omega_4^2\omega_1^3\omega_2^2+144\omega_4^2\omega_1^3\omega_2\omega_3^2-63\omega_4^2\omega_1^3v_3^2\omega_2^3\omega_3-72\omega_4\omega_1^3\omega_2^2\omega_3-216\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2+20\omega_4^2\omega_1^2\omega_2^3\omega_3^2-36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2-$
$189\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3-36v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3-20\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3^2+54v_1^2\omega_4^2\omega_1^3\omega_2^3-24v_1^2\omega_4^2\omega_1^3\omega_2\omega_3-36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3^2+180\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2-63\omega_4\omega_1^3\omega_2^3\omega_3^2+$
$48\omega_4^2\omega_1^2\omega_2^2\omega_3-324\omega_4c_s^2\omega_1^3\omega_2^3\omega_3-108\omega_4^2\omega_1^3\omega_2^3+216\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2-180\omega_4\omega_1^2v_3^2\omega_2^3\omega_3^2+20\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2+108\omega_4c_s^2\omega_1\omega_2^3\omega_3^2-$
$36v_1^2\omega_4\omega_1\omega_2^3\omega_3^2-36v_1^2\omega_4^2\omega_1^3\omega_2^2-60\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3-108v_1^2\omega_4\omega_1^3\omega_2^3\omega_3+60\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2+72v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2-54\omega_1^3v_3^2\omega_2^3\omega_3^2+48\omega_4^2\omega_1^3v_3^2\omega_3^2-$
$36\omega_4^2\omega_1\omega_2^3\omega_3^2+324\omega_4^2c_s^2\omega_1^3\omega_2^3-72\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2+63\omega_4^2\omega_1^3\omega_2^3\omega_3-72\omega_4\omega_1^2\omega_2^2\omega_3^2-216\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2-60\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2-48v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2+$
$12v_1^2\omega_4^2\omega_1\omega_2^3\omega_3-360\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2+24\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2-108v_1^2\omega_1^2\omega_2^3\omega_3^2-432\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2-20\omega_4^2\omega_1^3\omega_2^2\omega_3^2-144\omega_4\omega_1^2\omega_2^3\omega_3-216\omega_4^2c_s^2\omega_1^3\omega_2^2-$
$48v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2-96\omega_4^2v_3^2\omega_2^3\omega_3^2-24\omega_4^2\omega_1v_3^2\omega_2^3\omega_3-144\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3-72\omega_4^2\omega_1^2v_3^2\omega_2^3+36v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3+36v_1^2\omega_4\omega_1^2\omega_2^3\omega_3^2+108\omega_4^2\omega_1v_3^2\omega_2^3\omega_3^2+$
$180\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2+180v_1^2\omega_4\omega_1^2\omega_2^3\omega_3+432\omega_4c_s^2\omega_1^2\omega_2^3\omega_3-108\omega_4^2\omega_1^3\omega_2^2\omega_3+48v_1^2\omega_4^2\omega_1^3\omega_3^2-120\omega_4^2c_s^2\omega_2^3\omega_3^2+144\omega_4\omega_1^2\omega_2^3\omega_3^2+144\omega_4^2v_2^2\omega_1^3\omega_3^2+$
$24\omega_4^2\omega_1\omega_2^2\omega_3^2-432\omega_4^2c_s^2\omega_1^2\omega_2^3+324\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3+24\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2-144\omega_4^2\omega_1^3\omega_3^2+36v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2-36v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2-144\omega_4^2c_s^2\omega_1^3\omega_2\omega_3+$
$108\omega_1^2v_3^2\omega_2^3\omega_3^2+12\omega_4^2\omega_1\omega_2^3\omega_3+72\omega_4\omega_1v_3^2\omega_2^3\omega_3^2+96\omega_4^2\omega_1^2\omega_2\omega_3^2+216\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2-24\omega_4^2\omega_1^3v_3^2\omega_2\omega_3-108\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2$

$C_{39} = 216\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2-180\omega_4v_2^2\omega_1^2\omega_2^3\omega_3^2-96\omega_4^2v_2^2\omega_2^3\omega_3^2-72\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2-72v_1^2\omega_4^2\omega_1^2\omega_2^3+336\omega_4^2c_s^2\omega_1^3\omega_3^2+12v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3-$
$72\omega_4^2v_2^2\omega_1^2\omega_2^3+48v_1^2\omega_4^2\omega_2^3\omega_3^2+324\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3+108\omega_4\omega_1^3\omega_2^3\omega_3-108\omega_4^2\omega_1^2\omega_2^2\omega_3^2+189\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2+54v_1^2\omega_1^3\omega_2^3\omega_3^2-60\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3-$
$36\omega_4\omega_1\omega_2^3\omega_3^2+36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3-144\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2-36v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2-36\omega_4^2c_s^2\omega_1\omega_2^3\omega_3-20\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3^2+144\omega_4^2\omega_1^2\omega_2^3-54v_2^2\omega_1^3\omega_2^3\omega_3^2+$
$48\omega_4^2\omega_1^3\omega_2\omega_3-72\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2+72\omega_4\omega_1^3\omega_2^2\omega_3^2+24\omega_4^2\omega_2^3\omega_3^2+216\omega_4c_s^2\omega_1^3\omega_2^2\omega_3-108\omega_4^2\omega_1^2\omega_2^3\omega_3+144\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3+72\omega_4^2\omega_1^3\omega_2^2+$
$144\omega_4^2\omega_1^3\omega_2\omega_3^2-24\omega_4^2v_2^2\omega_1^3\omega_2\omega_3-72\omega_4\omega_1^3\omega_2^2\omega_3-216\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2+20\omega_4^2\omega_1^2\omega_2^3\omega_3^2-36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2-189\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3+54\omega_4^2v_2^2\omega_1^3\omega_2^3-$
$36v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3+36\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2+54v_1^2\omega_4^2\omega_1^3\omega_2^3-24v_1^2\omega_4^2\omega_1^3\omega_2\omega_3+180\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2-63\omega_4\omega_1^3\omega_2^3\omega_3^2+48\omega_4^2\omega_1^2\omega_2^2\omega_3-324\omega_4c_s^2\omega_1^3\omega_2^3\omega_3-$
$108\omega_4^2\omega_1^3\omega_2^3-36\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2+108\omega_4c_s^2\omega_1\omega_2^3\omega_3^2-36\omega_4v_2^2\omega_1^2\omega_2^3\omega_3-36v_1^2\omega_4\omega_1\omega_2^3\omega_3^2-36v_1^2\omega_4^2\omega_1^3\omega_2^2-108v_1^2\omega_4\omega_1^3\omega_2^3\omega_3-36\omega_4^2v_2^2\omega_1^3\omega_2^2+$
$60\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2+72v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2+144\omega_4^2\omega_1^3v_3^2\omega_3^2-36\omega_4^2\omega_1\omega_2^3\omega_3^2+108v_2^2\omega_1^2\omega_2^3\omega_3^2+324\omega_4^2c_s^2\omega_1^3\omega_2^3-108\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2+63\omega_4^2\omega_1^3\omega_2^3\omega_3-$
$72\omega_4\omega_1^2\omega_2^2\omega_3^2+24\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2-24\omega_4^2v_2^2\omega_1\omega_2^3\omega_3-60\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2-48v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2+12v_1^2\omega_4^2\omega_1\omega_2^3\omega_3-360\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2+$
$36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3-108v_1^2\omega_1^2\omega_2^3\omega_3^2-432\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2-20\omega_4^2\omega_1^3\omega_2^2\omega_3^2-144\omega_4\omega_1^2\omega_2^3\omega_3+24\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2-216\omega_4^2c_s^2\omega_1^3\omega_2^2+72\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3-$
$48v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2+72\omega_4^2v_3^2\omega_2^3\omega_3^2+63\omega_4v_2^2\omega_1^3\omega_2^3\omega_3^2-144\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3+36v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3+36v_1^2\omega_4\omega_1^2\omega_2^3\omega_3^2-108\omega_4^2\omega_1v_3^2\omega_2^3\omega_3^2+$
$180\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2+72\omega_4v_2^2\omega_1\omega_2^3\omega_3^2+180v_1^2\omega_4\omega_1^2\omega_2^3\omega_3+432\omega_4c_s^2\omega_1^2\omega_2^3\omega_3-108\omega_4^2\omega_1^3\omega_2^2\omega_3+48v_1^2\omega_4^2\omega_1^3\omega_3^2-120\omega_4^2c_s^2\omega_2^3\omega_3^2+144\omega_4\omega_1^2\omega_2^3\omega_3^2+$
$48\omega_4^2v_2^2\omega_1^3\omega_3^2+24\omega_4^2\omega_1\omega_2^2\omega_3^2+20\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2-432\omega_4^2c_s^2\omega_1^2\omega_2^3+324\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3-216\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2-144\omega_4^2\omega_1^3\omega_3^2+36v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2-$
$36v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2-144\omega_4^2c_s^2\omega_1^3\omega_2\omega_3-36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3^2+12\omega_4^2\omega_1\omega_2^3\omega_3+96\omega_4^2\omega_1^2\omega_2\omega_3^2-63\omega_4^2v_2^2\omega_1^3\omega_2^3\omega_3+216\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2+108\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2$

$C_{40} = -16\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2-96\omega_4^2v_2^2\omega_2^3\omega_3^2+128\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2-72\omega_4^2v_2^4\omega_1^2\omega_2\omega_3^2+432\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2-104\omega_4^2c_s^2\omega_1^3\omega_3^2-56\omega_4^2c_s^2\omega_1v_3^2\omega_2^3\omega_3-$
$168\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2+16\omega_4^2\omega_1^2\omega_2^2\omega_3^2-27\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2-432\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2-162c_s^4\omega_1^3\omega_2^3\omega_3^2-30\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2-24\omega_4^2v_2^2\omega_1^2v_3^2\omega_2\omega_3^2-$
$108c_s^2\omega_1^2\omega_2^3\omega_3^2-56\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2-324\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2+80\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2+56\omega_4^2c_s^2\omega_1\omega_2^3\omega_3+192\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3-432\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3^2-$

$40\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 + 96\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2\omega_3^2\omega_3^2 - 60\omega_4^2v_2^2\omega_1v_3^2\omega_2^3\omega_3^2 + 192\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 + 24\omega_4^2v_2^4\omega_2^3\omega_3^2 - 432\omega_4^2c_s^2v_2^2\omega_1\omega_3^2\omega_3^2 -$
$8\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3 - 8\omega_4^2\omega_1^3\omega_2\omega_3^2 + 144\omega_4^2c_s^4\omega_1^3\omega_3^2 + 27\omega_4^2c_s^2\omega_1^3\omega_3^3\omega_3 - 8\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2 + 64\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2 + 32\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 - 24\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 -$
$96\omega_4^2v_2^2\omega_1v_3^2\omega_2^2\omega_3^2 - 84\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2 + 324\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3 - 192\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 32\omega_4^2c_s^2v_3^2\omega_3^2\omega_3^2 - 60\omega_4^2v_2^2\omega_1^3v_3^2\omega_2\omega_3^2 - 36\omega_4^2v_2^4\omega_1\omega_2^2\omega_3^2 -$
$10\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 8\omega_4^2c_s^2\omega_1v_3^2\omega_3^3\omega_3^2 - 8\omega_4^2\omega_1^3v_3^2\omega_3^2 - 108\omega_4c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1\omega_3^3\omega_3^2 - 432\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 54\omega_4^2c_s^2\omega_1^3\omega_3^2 + 8\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 +$
$96\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 216\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 + 108c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2 + 10\omega_4^2c_s^2\omega_1^2\omega_3^3\omega_3^2 + 144\omega_4^2c_s^4\omega_3^3\omega_3^2 + 54c_s^2\omega_1^3\omega_3^3\omega_3^2 + 108\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3 -$
$252\omega_4^2c_s^4\omega_1^2\omega_2^3 + 112\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 + 48\omega_4^2v_2^4\omega_1^3\omega_3^2 + 81\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 + 108\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 - 168\omega_4^2c_s^4\omega_1\omega_3^3\omega_3 + 96\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 -$
$72\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 24\omega_4^2c_s^2\omega_1^3\omega_2^2 + 324c_s^4\omega_1^2\omega_2^2\omega_3^2 - 36\omega_4^2v_2^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2v_3^2\omega_3^2\omega_3^2 - 64\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 + 32\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 8\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 +$
$162\omega_4^2c_s^4\omega_1^3\omega_2^3 - 176\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 72\omega_4^2v_2^2v_3^2\omega_3^2\omega_3^2 + 64\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 + 54\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^3 + 10\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 104\omega_4^2c_s^2\omega_2^2\omega_3^2 +$
$864\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 24\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 - 96\omega_4^2v_2^2\omega_1^3\omega_3^2 - 8\omega_4^2\omega_1\omega_2^2\omega_3^2 + 432\omega_4^2c_s^2v_2^2\omega_3^2\omega_3^2 + 84\omega_4^2c_s^2\omega_1^2\omega_2^3 - 81\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3 + 72\omega_4^2v_2^4\omega_1^2\omega_2^2\omega_3^2 -$
$108\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 - 54c_s^2\omega_1^3v_3^2\omega_2^3\omega_3^2 + 8\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 + 8\omega_4^2\omega_1^3\omega_3^2 - 10\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2 + 8\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 - 72\omega_4^2c_s^4\omega_1^3\omega_2^2 + 27\omega_4c_s^2\omega_1^3v_3^2\omega_2^3\omega_3^2 -$
$8\omega_4^2\omega_1^2\omega_2\omega_3^2 + 30\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 - 27\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^3\omega_3 + 96\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2 + 120\omega_4^2v_2^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 24\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2 + 48\omega_4^2v_2^2\omega_1^3v_3^2\omega_3^2$

$C_{41} = 2\omega_4\omega_1v_3^2\omega_3 + 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 6\omega_4c_s^2\omega_1\omega_3 - 6\omega_4c_s^2\omega_2\omega_3 - 9\omega_1\omega_2\omega_3 - 9\omega_4\omega_1v_3^2\omega_2 + 9\omega_1v_3^2\omega_2\omega_3 - 2\omega_4v_3^2\omega_2\omega_3 -$
$2\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{42} = -6c_s^2\omega_1^3\omega_2 - 3\omega_1v_3^2\omega_2^3\omega_3 + 48c_s^2\omega_1^2\omega_2^2\omega_3 + 4v_3^2\omega_3^3\omega_3 - 4\omega_1^2v_3^2\omega_2\omega_3 + 4\omega_1^3v_3^2\omega_3 + 12c_s^2\omega_1^2\omega_2^2 + 10\omega_1\omega_2^3\omega_3 + 2\omega_1\omega_2^3 - 13v_2^2\omega_1\omega_2^3\omega_3 -$
$22v_2^2\omega_1^2\omega_2\omega_3 + 4\omega_1^2v_3^2\omega_2^2 - 3\omega_1^3v_3^2\omega_2\omega_3 + 14\omega_1^2\omega_2\omega_3 - 4\omega_1v_3^2\omega_2^2\omega_3 - 24c_s^2\omega_1^3\omega_2\omega_3 - 4v_2^2\omega_1\omega_2^2\omega_3 + 8\omega_1\omega_2^2\omega_3 + 16v_2^2\omega_1^3\omega_3 - 12\omega_1^3\omega_3 +$
$26c_s^2\omega_2^3\omega_3 - 2\omega_1^3v_3^2\omega_2 - 24c_s^2\omega_1\omega_2^3\omega_3 + 28c_s^2\omega_1^3\omega_3 - 10\omega_2^3\omega_3 + 10v_2^2\omega_2^3\omega_3 + 26v_2^2\omega_1^2\omega_2^2\omega_3 - 2\omega_1v_3^2\omega_2^3 - 20\omega_1^2\omega_2^2\omega_3 - 24c_s^2\omega_1\omega_2^2\omega_3 +$
$6\omega_1^2v_3^2\omega_2^2\omega_3 + 2\omega_1^3\omega_2 - 6c_s^2\omega_1\omega_2^3 - 30c_s^2\omega_1^2\omega_2\omega_3 + 10\omega_1^3\omega_2\omega_3 - 4\omega_1^2\omega_2^2 - 13v_2^2\omega_1^3\omega_2\omega_3$

$C_{43} = 24\omega_4^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2 - 216\omega_4c_s^2v_2^2\omega_1^2\omega_5\omega_3^2\omega_3^2 - 24\omega_4^2v_2^4\omega_1^3\omega_5\omega_2\omega_3 + 48\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2\omega_3 + 24\omega_4^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2 + 240\omega_4^2c_s^2v_3^2\omega_5\omega_3^2\omega_3^2 -$
$24\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_2^2\omega_3^2 - 162\omega_4c_s^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3^2 + 288\omega_4c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 + 160\omega_4^2c_s^4\omega_1\omega_5\omega_2^3\omega_3 + 24\omega_4^2v_2^2\omega_1^3\omega_5\omega_2\omega_3 + 16\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2 -$
$288\omega_4c_s^4\omega_1\omega_5\omega_2^3\omega_3^2 + 24\omega_4^2v_2^4\omega_1^2\omega_5\omega_2\omega_3^2 - 160\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3 + 288\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 + 324c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 6\omega_4^2c_s^2\omega_1^2v_2^2\omega_5\omega_2^3\omega_3^2 -$
$348\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2\omega_3^2 - 72\omega_4^2v_2^2\omega_1^2v_3^2\omega_5\omega_2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3^2 + 180\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_2^3\omega_3 - 56\omega_4^2c_s^4\omega_1\omega_5\omega_2^2\omega_3^2 - 48\omega_4^2v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 -$
$120\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_2^3\omega_3^2 + 64\omega_4^2c_s^2\omega_1\omega_5\omega_2^2\omega_3^2 + 108\omega_4c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 - 28\omega_4^2c_s^4\omega_1^3\omega_5\omega_2\omega_3^2 + 264\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3 - 48\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2 +$
$108\omega_4^2v_3^4\omega_1\omega_5\omega_2^3\omega_3^2 - 108\omega_4c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3 - 27v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3\omega_3 + 132\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2 + 16\omega_4^2c_s^4\omega_1^3\omega_5\omega_2\omega_3 - 72\omega_4^2v_2^2\omega_1^2\omega_5\omega_3^2 -$
$24\omega_4^2\omega_1^3v_3^2\omega_5\omega_3^2 + 264\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_3^2 + 216\omega_4^2v_2^2v_3^2\omega_5\omega_3^2\omega_3^2 - 36\omega_4v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 + 64\omega_4^2c_s^2\omega_1^2\omega_5\omega_2\omega_3^2 + 12\omega_4^2v_2^4\omega_1\omega_5\omega_3^2\omega_3 -$
$16\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3 + 24\omega_4^2\omega_1v_3^2\omega_5\omega_3^2\omega_3^2 - 96\omega_4^2v_2^4\omega_5\omega_3^2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2 + 27v_1^2\omega_4c_s^2\omega_1^3\omega_5\omega_3^2\omega_3^2 + 300\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_3^2\omega_3^2 + 36\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^2 +$
$36\omega_4v_3^4\omega_1\omega_5\omega_3^2\omega_3^2 - 56\omega_4^2c_s^4\omega_1^2\omega_5\omega_2\omega_3^2 - 12\omega_4^2v_2^2\omega_1\omega_5\omega_3^2\omega_3 - 6v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_3^2\omega_3^2 - 108\omega_4c_s^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 336\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_3^3\omega_3 +$
$132\omega_4^2v_2^2\omega_1^3\omega_5\omega_2\omega_3^2 + 24\omega_4^2v_2^4\omega_1\omega_5\omega_2^2\omega_3^2 - 216\omega_4^2c_s^2v_2^2\omega_5\omega_2^3\omega_3^2 + 108\omega_4c_s^2v_2^2\omega_1^3\omega_5\omega_3^2\omega_3^2 + 6v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1\omega_5\omega_3^2\omega_3^2 -$
$468\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_3^2\omega_3 - 72\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2\omega_3 - 162c_s^2v_2^2\omega_1^3\omega_5\omega_3^2\omega_3^2 + 72\omega_4^2v_2^2\omega_1\omega_5\omega_2^2\omega_3^2 - 216\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_3^2 - 24\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2\omega_3^2 -$
$72\omega_4^2v_2^4\omega_1^3\omega_5\omega_2\omega_3^2 + 108\omega_4c_s^2v_2^2\omega_1^2\omega_5\omega_3^2\omega_3 - 168\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2 - 12\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2 - 88\omega_4^2c_s^2\omega_5\omega_3^2\omega_3^2 - 54\omega_4^2v_2^2\omega_1^3\omega_5\omega_3^2 +$
$8\omega_4^2c_s^4\omega_1\omega_5\omega_3^2\omega_3^2 + 48\omega_4^2v_2^4\omega_1^3\omega_5\omega_3^2 + 2v_1^4\omega_4^2\omega_1^3\omega_5\omega_3^2\omega_3^2 + 288\omega_4c_s^4\omega_1^2\omega_5\omega_3^3\omega_3^2 + 216\omega_4^2c_s^2\omega_1^2\omega_5\omega_3^3\omega_3 - 18\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 - 36\omega_4v_2^4\omega_1^3\omega_5\omega_2^2\omega_3 +$
$9v_1^2\omega_4^2\omega_1^3\omega_5\omega_3^2\omega_3 - 6\omega_4^2c_s^4\omega_1^3\omega_5\omega_3^2\omega_3^2 + 8\omega_4^2\omega_1^3\omega_5\omega_3^2 + 180\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3 + 36\omega_4v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 12\omega_4^2v_2^4\omega_1^2\omega_5\omega_2^2\omega_3 - 8\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2 +$
$18\omega_4^2v_2^4\omega_1^3\omega_5\omega_2^2\omega_3^2 + 36\omega_4v_2^2\omega_1^3\omega_5\omega_2^2\omega_3 + 48\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 288\omega_4c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 216\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3\omega_3 + 2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3\omega_3^2 -$
$36\omega_4v_2^4\omega_1^2\omega_5\omega_2^2\omega_3^2 - 12\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3 - 108\omega_4c_s^2v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2 + 6\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2 - 72\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3 - 54v_2^4\omega_1^3\omega_5\omega_2^3\omega_3^2 -$
$96\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2\omega_3^2 - 36\omega_4v_2^2\omega_1^2\omega_5\omega_2^2\omega_3 - 18\omega_4^2v_2^4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 8\omega_4^2\omega_5\omega_2^3\omega_3^2 - 9v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3 - 72\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 54\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^3\omega_3 -$
$72\omega_4^2c_s^4\omega_1^3\omega_3^2 - 2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 54\omega_4v_2^4\omega_1^3\omega_5\omega_3^2\omega_3^2 - 180\omega_4^2v_2^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2 + 36\omega_4v_2^4\omega_1^2\omega_5\omega_3^2\omega_3 + 18\omega_4^2v_2^2\omega_1^2\omega_5\omega_3^2\omega_3^2 - 24\omega_4^2v_3^2\omega_5\omega_3^2\omega_3^2 +$
$162\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3 + 72\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 - 2v_1^4\omega_4^2\omega_1^2\omega_5\omega_3^2\omega_3^2 + 54v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 144\omega_4^2v_2^2\omega_1^3v_3^2\omega_5\omega_3^2 - 54\omega_4^2v_2^4\omega_1^3\omega_5\omega_2^3\omega_3 -$
$54\omega_4v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2 - 72\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3 + 56\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2\omega_3^2 - 144\omega_4v_2^4\omega_1^2\omega_5\omega_2^3\omega_3^2 - 36\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3 + 162\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^3 -$
$9v_1^2\omega_4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 4\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 360\omega_4^2v_2^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2 + 72\omega_4^2v_2^2\omega_1^2\omega_5\omega_3^2 + 108v_2^4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 112\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2\omega_3 -$
$60\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 108\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^3\omega_3 + 4\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3^2 - 8\omega_4^2\omega_1\omega_5\omega_2^3\omega_3^2 + 648\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2 - 288\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 +$
$144\omega_4v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 36\omega_4^2v_2^4\omega_1^2\omega_5\omega_2^3\omega_3 + 24\omega_4^2v_2^2\omega_5\omega_2^3\omega_3^2 - 108v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 112\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3 - 36\omega_4^2v_2^4\omega_1^3\omega_5\omega_2^2 + 24\omega_4^2\omega_1^2v_3^2\omega_5\omega_2\omega_3^2 +$
$32\omega_4^2c_s^4\omega_1^3\omega_5\omega_3^2 + 72\omega_4^2v_2^4\omega_1^3\omega_5\omega_2^2\omega_3 - 36\omega_4v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 - 28\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 108\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3 - 648\omega_4c_s^2\omega_1v_3^2\omega_5\omega_2^3\omega_3^2 -$
$108\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^2 - 84\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 9v_1^4\omega_4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 72\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3\omega_3 - 180\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3 - 72\omega_4c_s^4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^2\omega_5\omega_2\omega_3^2 +$
$54\omega_4^2v_3^4\omega_1^3\omega_5\omega_3^2 + 152\omega_4^2c_s^4\omega_5\omega_2^3\omega_3^2 + 4\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 96\omega_4^2v_2^2\omega_1^3\omega_5\omega_3^2 - 288\omega_4^2v_2^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2 - 72\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3 + 36\omega_4v_3^4\omega_1^3\omega_5\omega_2^2\omega_3^2 +$
$60\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 24\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_3^2 - 180\omega_4^2v_2^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2 + 72\omega_4^2c_s^4\omega_1^3\omega_5\omega_3^2\omega_3 + 72\omega_4c_s^2\omega_1^3\omega_5\omega_3^2\omega_3^2 - 36\omega_4^2v_2^4\omega_1^2\omega_5\omega_2^2\omega_3^2$

$C_{44} = -3\omega_1v_3^2\omega_3^2 + 12\omega_4v_2^2\omega_3 + 2\omega_4^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_1\omega_3^2 + 6\omega_4^2v_3^2\omega_3 - 6\omega_4^2v_3^2 - 6\omega_4^2\omega_1 - 18\omega_4c_s^2\omega_3^2 + 36\omega_4c_s^2\omega_3 - 6\omega_4^2v_2^2 - 18\omega_4c_s^2\omega_1\omega_3 +$
$2\omega_4\omega_1v_3^2\omega_3^2 + 3\omega_4^2\omega_1v_3^2 - 36\omega_4^2c_s^2 + 12\omega_4^2 - 6v_2^2\omega_3^2 - 6\omega_4^2\omega_3 + 18\omega_4^2c_s^2\omega_3 - 2\omega_4^2\omega_1v_3^2\omega_3 - 6\omega_4v_3^2\omega_3^2 - 6\omega_4v_2^2\omega_1\omega_3 - 12\omega_4\omega_3 - 2\omega_4\omega_1\omega_3^2 +$
$3\omega_4^2v_2^2\omega_1 + 6v_3^2\omega_3^2 + 3v_2^2\omega_1\omega_3^2 - 6\omega_4^2c_s^2\omega_1\omega_3 + 18\omega_4^2c_s^2\omega_1 + 6\omega_4\omega_3^2 + 6\omega_4\omega_1\omega_3$

$C_{45} = 6\omega_4v_2^2\omega_1\omega_2\omega_3 + 18\omega_4\omega_1v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 - 9\omega_4v_2^2\omega_1\omega_2 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 4\omega_4v_2^2\omega_2\omega_3 + 12\omega_4c_s^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_2\omega_3 -$
$9v_2^2\omega_1\omega_2\omega_3 + 2\omega_4v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4c_s^2\omega_1\omega_2\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 18\omega_4v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{46} = -24\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 28\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 52\omega_4^2c_s^2\omega_1^3\omega_3^2 - 4v_1^2\omega_4^2\omega_3^2\omega_3^2 - 102\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 9\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2 -$
$30v_1^2\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 + 54c_s^4\omega_1^3\omega_3^2\omega_3^2 - 119\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3^2 - 27\omega_4^2\omega_1^2v_3^4\omega_3^2\omega_3^2 + 16v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 24\omega_4^2\omega_1^3v_3^4\omega_3^2 + 36c_s^2\omega_1^2\omega_3^2\omega_3^2 - 3\omega_4^2c_s^2\omega_1^3\omega_3^2\omega_3^2 +$
$108\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 + 27\omega_4^2\omega_1^3v_3^4\omega_2^2\omega_3^2 + 4\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 4v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 + 28\omega_4^2c_s^2\omega_1\omega_3^2\omega_3 + 96\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 - 12v_1^2\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 +$
$36v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3 - 324\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 + 4\omega_4^2\omega_3^2\omega_3^2 - 4v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 24\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 4\omega_4^2\omega_1^3\omega_2\omega_3^2 - 32v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 - 36\omega_4^2\omega_1^2v_3^4\omega_2^2\omega_3^2 -$
$48v_1^2\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 + 72\omega_4^2c_s^4\omega_1^3\omega_3^2 - 20v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 36v_1^2c_s^2\omega_1^2\omega_3^2\omega_3^2 + 9\omega_4^2c_s^2\omega_1^3\omega_3^2\omega_3 + 27\omega_4^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 58\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2 +$
$216\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 - 30v_1^2\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 - 12\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 16v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 + 108\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3 - 216\omega_4^2c_s^2v_3^2\omega_3^2\omega_3^2 + 32v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 -$
$27\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2 + 36v_1^2\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 - 25\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 324\omega_4^2c_s^2\omega_1v_3^2\omega_2^3\omega_3^2 - 8v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 48\omega_4^2\omega_1^3v_3^2\omega_3^2 - 4\omega_4^2\omega_1\omega_3^2\omega_3^2 - 9v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 +$
$72\omega_4^2\omega_1v_3^4\omega_2^2\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2 + 66\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 + 4v_1^2\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2 - 72\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 + 49\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 - 18c_s^2\omega_1^3\omega_3^2\omega_3^2 - 72\omega_4^2c_s^4\omega_1^2\omega_3^2 +$
$4v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 74\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 12\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 - 27\omega_4c_s^4\omega_1^3\omega_2^2\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 - 84\omega_4^2c_s^4\omega_1\omega_3^2\omega_3 + 8v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 12\omega_4^2c_s^2\omega_1^3\omega_3^2 +$
$15\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3^2 - 108c_s^4\omega_1^2\omega_3^2\omega_3^2 + 4v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 + 24\omega_4^2v_3^2\omega_3^2\omega_3^2 - 24v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2 - 32\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 + 16v_1^2\omega_4^2c_s^2\omega_3^2\omega_3^2 - 12v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2 -$

$42\omega_4^2\omega_1v_3^2\omega_2^3\omega_3^2-9v_1^2\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2+54\omega_4^2c_s^4\omega_1^3\omega_2^3-16\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2-36\omega_4^2\omega_1^3v_3^4\omega_2\omega_3^2-28v_1^2\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2+138\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2-4v_1^2\omega_4^2\omega_1^3\omega_3^2+$
$20\omega_4^2c_s^2\omega_3^2\omega_3^2+60v_1^2\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2+78\omega_4^2c_s^4\omega_1\omega_3^2\omega_3^2-4\omega_4^2\omega_1\omega_2^2\omega_3^2+36v_1^2\omega_4^2v_3^2\omega_3^2\omega_3^2+24\omega_4^2c_s^2\omega_1^2\omega_2^3+36\omega_4^2\omega_1v_3^4\omega_2^2\omega_3^2-27\omega_4^2c_s^4\omega_3^3\omega_2^2\omega_3-$
$36\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3+12\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2+4\omega_4^2\omega_1^3\omega_3^2-138\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2+4v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2+4\omega_4^2c_s^2\omega_1^3\omega_2\omega_3+24v_1^2\omega_4^2\omega_1^3v_3^2\omega_3^2+18v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2-$
$36\omega_4^2c_s^4\omega_1^3\omega_2^2+3v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2-4\omega_4^2\omega_1^2\omega_2\omega_3^2-60\omega_4^2v_3^4\omega_2^3\omega_3^2+35\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2+18v_1^2c_s^2\omega_1^3\omega_2^3\omega_3^2-28v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3-4v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2$

$C_{47}=$
$56\omega_4c_s^4\omega_1^2\omega_2^2\omega_3+12v_1^2\omega_4\omega_1^2\omega_2\omega_3^2-36v_1^2\omega_4\omega_1^2v_3^2\omega_2\omega_3^2+6\omega_4\omega_1^2v_3^4\omega_2^2\omega_3-126v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3-68\omega_4c_s^4\omega_3^2\omega_3^2+24v_1^2\omega_4c_s^2\omega_1^3\omega_2\omega_3+54c_s^2\omega_1v_3^2\omega_2^3\omega_3^2-$
$48\omega_4\omega_1^3v_3^2\omega_3^2+9\omega_4\omega_1^3v_3^4\omega_2^2\omega_3^2+36\omega_4\omega_1^2v_3^2\omega_2^3\omega_3+18c_s^4\omega_1^3\omega_2^3\omega_3^2-18\omega_4\omega_1^3v_3^4\omega_2^2+150\omega_4c_s^2\omega_1v_3^2\omega_2^3\omega_3^2-4\omega_4\omega_1\omega_2^3\omega_3^2-8\omega_4c_s^2\omega_1\omega_2^3\omega_3-12v_1^2\omega_4\omega_1^3\omega_3^2+$
$32\omega_4c_s^2\omega_1^2\omega_2\omega_3^2-18\omega_4\omega_1^2v_3^2\omega_3^2-36\omega_4c_s^2\omega_1^3v_3^2\omega_2\omega_3-14\omega_4c_s^4\omega_1^3\omega_2\omega_3^2-90v_1^2\omega_4\omega_1v_3^2\omega_2^3\omega_3^2+72c_s^2\omega_1^2\omega_2^3\omega_3^2-96v_1^2\omega_4c_s^2\omega_2^3\omega_3^2-14\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2+$
$12v_1^2\omega_4\omega_1\omega_2^2\omega_3^2+12\omega_4v_3^2\omega_2^3\omega_3^2+4\omega_4\omega_1^3\omega_3^2-9\omega_4\omega_1^2v_3^4\omega_2^3\omega_3^2-36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3+66v_1^2\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2-42\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2+18\omega_1v_3^4\omega_2^3\omega_3^2+$
$32\omega_4c_s^2\omega_1\omega_2^2\omega_3^2+36\omega_4c_s^2\omega_1^3\omega_2^2\omega_3-12\omega_4c_s^2\omega_1^2v_3^2\omega_2\omega_3^2-12\omega_4c_s^2\omega_1v_3^2\omega_2^3\omega_3^2-4\omega_4\omega_1\omega_2^2\omega_3^2+108v_1^2\omega_4v_3^2\omega_3^3\omega_3^2-6\omega_4\omega_1^2v_3^2\omega_2^2\omega_3+v_1^4\omega_4\omega_1^3\omega_2^2\omega_3^2+$
$28\omega_4c_s^2\omega_2^3\omega_3^2-2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2-216v_1^2c_s^2\omega_1^2\omega_2^3\omega_3^2+8\omega_4c_s^4\omega_1^3\omega_2\omega_3-v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2-174\omega_4c_s^2\omega_1^3v_3^2\omega_2\omega_3^2+54\omega_4c_s^2\omega_1^2v_3^2\omega_3^2-36\omega_4c_s^4\omega_1^2\omega_2^3\omega_3+$
$132v_1^2\omega_4c_s^2\omega_1^2\omega_2^2\omega_3-9\omega_4\omega_1^3v_3^2\omega_2^2\omega_3^2-36\omega_4\omega_1^2v_3^4\omega_2^3\omega_3-108\omega_4c_s^2v_3^2\omega_2^3\omega_3^2+72c_s^4\omega_1\omega_2^3\omega_3^2-18\omega_4c_s^2\omega_1^3\omega_2^3\omega_3-18\omega_4c_s^2\omega_1v_3^2\omega_2^3\omega_3-4\omega_4\omega_1^2\omega_2\omega_3^2+$
$9\omega_4\omega_1^2v_3^2\omega_3^2\omega_3^2+36\omega_4\omega_1^3v_3^4\omega_2^2\omega_3-90v_1^2\omega_4\omega_1^3v_3^2\omega_2\omega_3^2+132\omega_4c_s^2\omega_1^3v_3^2\omega_3^2-48\omega_4v_3^4\omega_3^2\omega_3^2-18\omega_4c_s^2\omega_1\omega_2^3\omega_3^2+12v_1^2\omega_4\omega_1\omega_2^3\omega_3^2+28\omega_4c_s^4\omega_1^2\omega_3^2+$
$72v_1^2\omega_4\omega_1^3v_3^2\omega_3^2-6v_1^2\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2-18\omega_1v_3^2\omega_3^3\omega_3^2-18\omega_4\omega_1^2v_3^4\omega_2^2\omega_3^2-144v_1^2\omega_4\omega_1v_3^2\omega_2^2\omega_3^2-6v_1^2\omega_4c_s^2\omega_1^3\omega_2\omega_3^2-6\omega_4\omega_1v_3^2\omega_3^2\omega_3+18\omega_4\omega_1^2v_3^4\omega_3^2-$
$30\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2+216v_1^2c_s^2\omega_1\omega_2^2\omega_3^2-56\omega_4c_s^2\omega_1^2\omega_2^2\omega_3+8\omega_4\omega_1^2\omega_2^2\omega_3^2-12\omega_4\omega_1^3v_3^4\omega_2\omega_3-54c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2-20\omega_4c_s^2\omega_1^3\omega_3^2-18c_s^2\omega_1^3\omega_2^3\omega_3^2+$
$12\omega_4\omega_1^2v_3^4\omega_2\omega_3^2-28\omega_4c_s^4\omega_1^2\omega_2\omega_3^2+8\omega_4c_s^4\omega_1\omega_2^3\omega_3+6v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2-3\omega_4c_s^4\omega_1^3\omega_2^3\omega_3^2+18\omega_1^3v_3^4\omega_2^2\omega_3^2-18\omega_1^2v_3^2\omega_3^3\omega_3+2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2+$
$18\omega_4c_s^2\omega_1^3\omega_2\omega_3^2-18\omega_1^2v_3^4\omega_2^3\omega_3^2+18\omega_1^3v_3^2\omega_2^2\omega_3+36\omega_4\omega_1v_3^2\omega_2^2\omega_3^2+54\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3-v_1^4\omega_4\omega_1^2\omega_2^3\omega_3^2-72c_s^4\omega_1^2\omega_2^3\omega_3^2+54v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3+$
$30\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2-36\omega_4c_s^4\omega_1^3\omega_2^2\omega_3+18\omega_1^2v_3^2\omega_2^2\omega_3^2+12v_1^2\omega_4\omega_1^3\omega_2\omega_3^2+54\omega_4\omega_1v_3^4\omega_2^3\omega_3^2+48v_1^2\omega_4c_s^2\omega_1\omega_2^3\omega_3^2+54c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2+24\omega_4\omega_1^3v_3^4\omega_3^2+$
$66\omega_4\omega_1^3v_3^2\omega_2\omega_3^2+18\omega_4\omega_1^3v_3^2\omega_2^2+v_1^2\omega_4\omega_1^2\omega_3^3\omega_3^2-28\omega_4c_s^4\omega_1\omega_2^2\omega_3^2-12v_1^2\omega_4\omega_2^3\omega_3^2+6\omega_4\omega_1v_3^4\omega_3^2\omega_3+2\omega_4c_s^4\omega_1^3\omega_2^2\omega_3^2+90\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3+$
$12\omega_4\omega_1^3v_3^2\omega_2\omega_3-48v_1^2\omega_4c_s^2\omega_1^2\omega_2\omega_3^2-54c_s^2\omega_1^3v_3^2\omega_2^2\omega_3+60v_1^2\omega_4c_s^2\omega_1\omega_2^3\omega_3-54\omega_4c_s^2\omega_1^3v_3^2\omega_2^2+36\omega_4c_s^2\omega_1^2\omega_2^3\omega_3+16\omega_4c_s^4\omega_1^3\omega_3^2-54c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2+$
$24\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2-8\omega_4c_s^2\omega_1^3\omega_2\omega_3-18\omega_1^3v_3^2\omega_2^2\omega_3^2+18\omega_1^2v_3^4\omega_2^3\omega_3-4\omega_4\omega_1^3\omega_2\omega_3^2-84v_1^2\omega_4c_s^2\omega_1\omega_2^2\omega_3^2+76\omega_4c_s^4\omega_1\omega_2^3\omega_3^2-24v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2+$
$180v_1^2\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2-72c_s^2\omega_1\omega_2^3\omega_3^2-90v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3+12\omega_4\omega_1v_3^4\omega_2^2\omega_3^2+18\omega_1^2v_3^2\omega_3^2\omega_3^2-18\omega_1^3v_3^4\omega_2^2\omega_3+18\omega_4c_s^4\omega_1^3\omega_3^2\omega_3-90\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3-$
$24\omega_4\omega_1v_3^2\omega_2^2\omega_3^2-18\omega_1^2v_3^4\omega_2^2\omega_3^2+4\omega_4\omega_2^3\omega_3^2+54v_1^2c_s^2\omega_1^3\omega_2^3\omega_3^2-36\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2+12v_1^2\omega_4c_s^2\omega_1^2\omega_3^3+54c_s^2\omega_1^2v_3^2\omega_2^3\omega_3-36\omega_4\omega_1^3v_3^4\omega_2\omega_3^2$

$C_{48}=-18c_s^2\omega_1^3\omega_2+141\omega_1v_3^2\omega_2^3\omega_3-23\omega_1^3\omega_2^2\omega_3-114v_3^2\omega_2^3\omega_3-9v_1^2\omega_1\omega_2^3\omega_3+6\omega_1^2v_3^2\omega_2\omega_3+48\omega_1^3v_3^2\omega_3+36c_s^2\omega_1^2\omega_2^2-60\omega_1\omega_2^3\omega_3+6\omega_1\omega_2^3+$
$12v_1^2\omega_2^3\omega_3-6v_1^2\omega_1^3\omega_2-12v_1^2\omega_1\omega_2^2\omega_3-75\omega_1^3v_3^2\omega_2\omega_3-42c_s^2\omega_1^2\omega_2^3\omega_3+6\omega_1^2\omega_2\omega_3+60\omega_1v_3^2\omega_2^2\omega_3-108c_s^2\omega_1^3\omega_2\omega_3+12v_1^2\omega_1^2\omega_2^2-12v_1^2\omega_1^2\omega_2\omega_3-$
$12\omega_1\omega_2^2\omega_3-36\omega_1^3\omega_3-66c_s^2\omega_2^3\omega_3+18v_1^2\omega_1^2\omega_2^2\omega_3+108c_s^2\omega_1\omega_2^3\omega_3-50\omega_1^2v_3^2\omega_2^3\omega_3+84c_s^2\omega_1^3\omega_3-6v_1^2\omega_1\omega_2^3+42\omega_2^3\omega_3+50\omega_1^3v_3^2\omega_2^2\omega_3+$
$42c_s^2\omega_1^3\omega_2^2\omega_3+12\omega_1^2\omega_2^2\omega_3-66\omega_1^2v_3^2\omega_2^2\omega_3-9v_1^2\omega_1^3\omega_2\omega_3+6\omega_1^3\omega_2-18c_s^2\omega_1\omega_2^3+12v_1^2\omega_1^3\omega_3+23\omega_1^2\omega_2^3\omega_3-18c_s^2\omega_1^2\omega_2\omega_3+48\omega_1^3\omega_2\omega_3-12\omega_1^2\omega_2^2$

$C_{49}=-192\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2-8\omega_4^2v_2^2\omega_3^2\omega_3^2+128\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2+32\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2-104\omega_4^2c_s^2\omega_1^3\omega_3^2-168\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2+16\omega_4^2\omega_1^2\omega_2^2\omega_3^2-$
$27\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2-56\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2-162c_s^4\omega_1^3\omega_3^2\omega_3^2-30\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3^2-24\omega_4^2v_2^2\omega_1^2v_3^2\omega_2\omega_3^2+48\omega_4^2\omega_1^3v_3^4\omega_3^2-108c_s^2\omega_1^2\omega_3^3\omega_3^2-$
$432\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2-324\omega_4c_s^4\omega_1^2\omega_2^2\omega_3^2+80\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2+56\omega_4^2c_s^2\omega_1\omega_2^3\omega_3-56\omega_4^2c_s^2v_2^2\omega_1\omega_3^3\omega_3+192\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3-8\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3^2-$
$432\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2+8\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2+8\omega_4^2\omega_3^2\omega_3^2-60\omega_4^2v_2^2\omega_1v_3^2\omega_2^3\omega_3^2+192\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2+8\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3^2-8\omega_4^2\omega_1^3\omega_2\omega_3^2+72\omega_4^2\omega_1^2v_3^4\omega_2^2\omega_3^2-$
$27\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3+144\omega_4^2c_s^4\omega_1^3\omega_3^2-54c_s^2v_2^2\omega_1^3\omega_3^2\omega_3^2+27\omega_4^2c_s^2\omega_1^3\omega_3^2\omega_3-432\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2+27\omega_4c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2+64\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2+$
$432\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2+10\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2-24\omega_4^2c_s^4\omega_1^3\omega_2\omega_3-96\omega_4^2v_2^2\omega_1v_3^2\omega_2^2\omega_3^2+324\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3-16\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2+432\omega_4^2c_s^2v_3^2\omega_3^2\omega_3^2-$
$60\omega_4^2v_2^2\omega_1^3v_3^2\omega_2\omega_3^2-10\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2-432\omega_4^2c_s^2\omega_1v_3^2\omega_3^3\omega_3^2-96\omega_4^2\omega_1^3v_3^2\omega_3^2-8\omega_4^2\omega_1\omega_2^3\omega_3^2-40\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2-36\omega_4^2\omega_1v_3^4\omega_3^2\omega_3^2-$
$54\omega_4^2c_s^2\omega_1^3\omega_2^2+96\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2+54\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2+8\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2-216\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2-10\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2+10\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2+144\omega_4^2c_s^4\omega_3^3\omega_3^2+$
$54c_s^2\omega_1^3\omega_2^3\omega_3^2-252\omega_4^2c_s^4\omega_1^2\omega_3^2+112\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2+96\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2+81\omega_4c_s^4\omega_1^3\omega_2^3\omega_3^2-72\omega_4^2\omega_1^2v_3^4\omega_2\omega_3^2+108\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2-24\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2-$
$168\omega_4^2c_s^4\omega_1\omega_2^3\omega_3+8\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2-72\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2+64\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3+24\omega_4^2c_s^2\omega_1^3\omega_2^2+324c_s^4\omega_1^2\omega_3^3\omega_3^2-96\omega_4^2v_3^2\omega_3^2\omega_3^2-64\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3+$
$864\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2+96\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2+162\omega_4^2c_s^4\omega_1^3\omega_3^2-176\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2-36\omega_4^2\omega_1^3v_3^4\omega_2\omega_3^2+72\omega_4^2v_2^2v_3^2\omega_2^3\omega_3^2-84\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2-$
$104\omega_4^2c_s^2\omega_2^3\omega_3^2+32\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2-24\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2-8\omega_4^2v_2^2\omega_1^3\omega_3^2-8\omega_4^2\omega_1\omega_2^2\omega_3^2+32\omega_4^2c_s^2v_2^2\omega_2^3\omega_3^2+84\omega_4^2c_s^2\omega_1^2\omega_3^2-81\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3-$
$108\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3+96\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2+108c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2+8\omega_4^2\omega_1^3\omega_3^2+8\omega_4^2c_s^2\omega_1^3\omega_2\omega_3-108\omega_4c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2-72\omega_4^2c_s^4\omega_1^3\omega_2^2-8\omega_4^2\omega_1^2\omega_2\omega_3^2-$
$8\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3+24\omega_4^2v_3^4\omega_2^2\omega_3^2+30\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2+108\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^3\omega_3+8\omega_4^2v_2^2\omega_1\omega_3^2\omega_3^2+120\omega_4^2v_2^2\omega_1^2v_3^2\omega_2^2\omega_3^2+48\omega_4^2v_2^2\omega_1^3v_3^2\omega_3^2$

$C_{50}=27c_s^2\omega_1\omega_2\omega_3-9\omega_4v_2^2\omega_1\omega_2+2\omega_4\omega_2\omega_3+9\omega_4\omega_1\omega_2-2\omega_4v_2^2\omega_2\omega_3+6\omega_4c_s^2\omega_1\omega_3-6\omega_4c_s^2\omega_2\omega_3+9v_2^2\omega_1\omega_2\omega_3+2\omega_4v_2^2\omega_1\omega_3-9\omega_1\omega_2\omega_3-$
$2\omega_4\omega_1\omega_3-27\omega_4c_s^2\omega_1\omega_2$

$C_{51}=48\omega_4^2\omega_1^3v_3^4\omega_5\omega_3^2+132\omega_4^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2+648\omega_4c_s^2v_2^2\omega_1^2\omega_5\omega_3^2\omega_3^2+144\omega_4\omega_1^2v_3^2\omega_5\omega_3^2\omega_3^2-72\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2\omega_3+72\omega_4^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2-$
$216\omega_4^2c_s^2v_3^2\omega_5\omega_3^2\omega_3^2-108\omega_1^2v_3^2\omega_5\omega_3^2\omega_3^2+36\omega_4\omega_1^3v_3^4\omega_5\omega_2^2\omega_3^2-168\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_2^2\omega_3^2+108\omega_4c_s^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3^2+288\omega_4c_s^2\omega_1\omega_5\omega_3^2\omega_3^2+$
$24\omega_4^2v_2^2\omega_1^2\omega_5\omega_2\omega_3^2+160\omega_4^2c_s^4\omega_1\omega_5\omega_3^2\omega_3-36\omega_4^2\omega_1^2v_3^2\omega_5\omega_3^2\omega_3-162c_s^2\omega_1^3v_3^2\omega_5\omega_3^2\omega_3^2+16\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3^2-288\omega_4c_s^4\omega_1\omega_5\omega_3^2\omega_3^2-$
$160\omega_4^2c_s^2\omega_1\omega_5\omega_3^2\omega_3-216\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_3^2+288\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3^2+72\omega_4^2\omega_1^3v_3^4\omega_5\omega_2^2\omega_3-60\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_3^3\omega_3^2-12\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2\omega_3^2-$
$72\omega_4^2v_2^2\omega_1^2v_3^2\omega_5\omega_2\omega_3^2+36\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3^2-12\omega_4^2\omega_1v_3^2\omega_5\omega_3^2\omega_3+336\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_3^2\omega_3-108\omega_4c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3-56\omega_4^2c_s^4\omega_1\omega_5\omega_2^2\omega_3^2+$
$24\omega_4^2v_2^2\omega_1\omega_5\omega_3^2\omega_3^2+300\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_3^2\omega_3^2+64\omega_4^2c_s^2\omega_1\omega_5\omega_2^2\omega_3^2-36\omega_4\omega_1v_3^2\omega_5\omega_3^2\omega_3^2-28\omega_4^2c_s^4\omega_1^3\omega_5\omega_2\omega_3^2+108\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3-$
$84\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2-96\omega_4^2v_3^4\omega_5\omega_3^2\omega_3^2-54\omega_4^2\omega_1^3v_3^4\omega_5\omega_3^2\omega_3-27v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2\omega_3+48\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2+16\omega_4^2c_s^4\omega_1^3\omega_5\omega_2\omega_3-96\omega_4^2\omega_1^3v_3^2\omega_5\omega_3^2-$
$12\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3+24\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_3^2+216\omega_4^2v_2^2v_3^2\omega_5\omega_3^2\omega_3^2+64\omega_4^2c_s^2\omega_1^2\omega_5\omega_3\omega_3^2-16\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3-48\omega_4^2\omega_1v_3^2\omega_5\omega_3^2\omega_3^2+24\omega_4^2\omega_1^2v_3^4\omega_5\omega_2\omega_3^2-$
$40\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2+27v_1^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2+108\omega_4c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2-120\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_2^2\omega_3^2+54\omega_4\omega_1^3v_3^4\omega_5\omega_2^2\omega_3^2-56\omega_4^2c_s^4\omega_1^2\omega_5\omega_2\omega_3^2-$
$108\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2-54\omega_1^3v_3^4\omega_5\omega_2^2\omega_3^2-6v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_3^2\omega_3^2+36\omega_4\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2+180\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_3^2\omega_3+18\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2+$
$24\omega_4^2v_2^2\omega_1^3\omega_5\omega_2\omega_3^2+240\omega_4^2c_s^2v_2^2\omega_5\omega_3^2\omega_3^2-162\omega_4c_s^2v_2^2\omega_1^3\omega_5\omega_3^2\omega_3^2+18\omega_4^2\omega_1^3v_3^4\omega_5\omega_2^2\omega_3^2+6v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2+36\omega_4^2c_s^2\omega_1\omega_5\omega_3^2\omega_3^2-$
$72\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_3^2\omega_3+48\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2\omega_3+24\omega_4^2v_2^2\omega_1\omega_5\omega_2^2\omega_3^2-96\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2\omega_3^2-36\omega_4\omega_1^2v_3^2\omega_5\omega_3^2\omega_3-24\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2+$
$24\omega_4^2\omega_1^3v_3^2\omega_5\omega_2\omega_3+162\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_3^2-348\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2-88\omega_4^2c_s^2\omega_5\omega_3^2\omega_3^2+8\omega_4^2c_s^4\omega_1\omega_5\omega_3^2\omega_3^2-36\omega_4\omega_1^3v_3^4\omega_5\omega_2^2\omega_3+2v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3^2+$
$288\omega_4c_s^4\omega_1^2\omega_5\omega_3^2\omega_3^2+24\omega_4^2\omega_1v_3^4\omega_5\omega_2^2\omega_3^2+216\omega_4^2c_s^2\omega_1^2\omega_5\omega_3^2\omega_3+108\omega_1^2v_3^4\omega_5\omega_3^2\omega_3^2+9v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3-36\omega_4\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2-6\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2+$
$8\omega_4^2\omega_1^3\omega_5\omega_3^2-180\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3+54\omega_4^2\omega_1^3v_3^4\omega_5\omega_3^2-144\omega_4\omega_1^2v_3^4\omega_5\omega_3^2\omega_3^2-108\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2-72\omega_4^2\omega_1^3v_3^4\omega_5\omega_2\omega_3^2-8\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2-$
$72\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3+132\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2-288\omega_4c_s^2\omega_1^2\omega_5\omega_3^2\omega_3^2-216\omega_4^2c_s^4\omega_1^2\omega_5\omega_3^2\omega_3+36\omega_4^2\omega_1^2v_3^4\omega_5\omega_3^2\omega_3+2v_1^2\omega_4^2\omega_1^2\omega_5\omega_3^2\omega_3^2-$
$648\omega_4c_s^2v_2^2\omega_1\omega_5\omega_3^2\omega_3^2-8\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2+60\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2-72\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3-36\omega_4^2\omega_1^3v_3^4\omega_5\omega_2^2-24\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2\omega_3^2+72\omega_4^2\omega_1^2v_3^2\omega_5\omega_3^2+$

$8\omega_4^2\omega_5\omega_2^3\omega_3^2 + 108\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3 - 9v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^3\omega_3 - 72\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 12\omega_4^2\omega_1v_3^4\omega_5\omega_2^3\omega_3 - 72\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3^2 - 2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3^2 -$
$180\omega_4^2v_2^2\omega_1v_3^2\omega_5\omega_2^3\omega_3^2 - 36\omega_4^2\omega_1^2v_3^4\omega_5\omega_2^2\omega_3^2 + 24\omega_4^2v_3^2\omega_5\omega_2^3\omega_3^2 - 108\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3 + 72\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 - 2v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3\omega_3^2 +$
$144\omega_4^2v_2^2\omega_1^3v_3^2\omega_5\omega_3^2 - 468\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3 + 36\omega_4\omega_1v_3^4\omega_5\omega_2^3\omega_3^2 + 56\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2\omega_3^2 + 12\omega_4^2\omega_1^2v_3^4\omega_5\omega_2^2\omega_3 - 9v_1^2\omega_4\omega_1^3\omega_5\omega_2^2\omega_3^2 -$
$4\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 360\omega_4^2v_2^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2 - 54\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^3 + 54\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3 + 324c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2 + 112\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2\omega_3 -$
$6\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 54\omega_1^3v_3^2\omega_5\omega_2^3\omega_3^2 + 162\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^3\omega_3 + 4\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3^2 - 8\omega_4^2\omega_1\omega_5\omega_2^3\omega_3^2 - 216\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2 -$
$288\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 - 36\omega_4\omega_1^2v_3^4\omega_5\omega_2^2\omega_3^2 - 24\omega_4^2v_2^2\omega_5\omega_2^3\omega_3^2 - 112\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3 + 108\omega_4^2\omega_1v_3^4\omega_5\omega_2^3\omega_3^2 - 54\omega_4\omega_1^3v_3^2\omega_5\omega_2^3\omega_3^2 + 32\omega_4^2c_s^4\omega_1^3\omega_5\omega_3^2 -$
$72\omega_4^2\omega_1^2v_3^4\omega_5\omega_2^3 - 18\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2 + 36\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^2 - 28\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 264\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3 - 108\omega_4c_s^2\omega_1v_3^2\omega_5\omega_2^3\omega_3^2 -$
$18\omega_4^2\omega_1^2v_3^4\omega_5\omega_2^3\omega_3^2 - 48\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 9v_1^4\omega_4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 72\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3\omega_3 + 180\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3 - 72\omega_4c_s^4\omega_1^3\omega_5\omega_2^3\omega_3^2 -$
$8\omega_4^2\omega_1^2\omega_5\omega_2\omega_3^2 + 152\omega_4^2c_s^4\omega_5\omega_2^3\omega_3^2 + 4\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 36\omega_4\omega_1^3v_3^2\omega_5\omega_2^2\omega_3 - 24\omega_4^2v_2^2\omega_1^3\omega_5\omega_3^2 - 288\omega_4^2v_2^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2 + 6\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 +$
$264\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_3^2 - 180\omega_4^2v_2^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2 + 72\omega_4^2c_s^4\omega_1^3\omega_5\omega_3^2\omega_3 + 72\omega_4c_s^2\omega_1^3\omega_5\omega_2^3\omega_3^2 - 24\omega_4^2\omega_1^3v_3^4\omega_5\omega_2\omega_3 + 36\omega_4\omega_1^2v_3^4\omega_5\omega_2^3\omega_3$

$C_{52} = -6c_s^2\omega_1^3\omega_2 - 13\omega_1v_3^2\omega_2^3\omega_3 + 48c_s^2\omega_1^2\omega_2^2\omega_3 + 10v_3^2\omega_2^3\omega_3 - 22\omega_1^2v_3^2\omega_2\omega_3 + 16\omega_1^3v_3^2\omega_3 + 12c_s^2\omega_1^2\omega_2^2 + 10\omega_1\omega_2^3\omega_3 - 2v_2^2\omega_1\omega_2^3 + 2\omega_1\omega_2^3 -$
$3v_2^2\omega_1\omega_2^3\omega_3 - 4v_2^2\omega_1^2\omega_2\omega_3 - 13\omega_1^3v_3^2\omega_2\omega_3 + 14\omega_1^2\omega_2\omega_3 - 4\omega_1v_3^2\omega_2^2\omega_3 - 24c_s^2\omega_1^3\omega_2\omega_3 - 4v_2^2\omega_1\omega_2^2\omega_3 + 8\omega_1\omega_2^2\omega_3 + 4v_2^2\omega_1^3\omega_3 - 12\omega_1^3\omega_3 +$
$26c_s^2\omega_2^3\omega_3 - 24c_s^2\omega_1\omega_2^3\omega_3 + 28c_s^2\omega_1^3\omega_3 - 10\omega_2^3\omega_3 + 4v_2^2\omega_2^3\omega_3 + 6v_2^2\omega_1^2\omega_2^2\omega_3 - 20\omega_1^2\omega_2^2\omega_3 - 24c_s^2\omega_1\omega_2^2\omega_3 + 26\omega_1^2v_3^2\omega_2^2\omega_3 - 2v_2^2\omega_1^3\omega_2 + 2\omega_1^3\omega_2 -$
$6c_s^2\omega_1\omega_2^3 - 30c_s^2\omega_1^2\omega_2\omega_3 + 10\omega_1^3\omega_2\omega_3 - 4\omega_1^2\omega_2^2 + 4v_2^2\omega_1^2\omega_2^2 - 3v_2^2\omega_1^3\omega_2\omega_3$

$C_{53} =$
$-3\omega_4^2v_2^4\omega_1^3\omega_5\omega_3 + 32\omega_4^2c_s^4\omega_1^2\omega_3^2 + 6\omega_4\omega_1^2v_3^2\omega_5\omega_3^2 - 8\omega_4^2c_s^4\omega_1^2\omega_5\omega_3 + 8\omega_4c_s^2\omega_1\omega_5\omega_3^2 + 6\omega_4^2\omega_1^2v_3^4\omega_5\omega_3 - 6\omega_4^2\omega_1^2v_3^4\omega_5 - 9c_s^2v_2^2\omega_1^3\omega_5\omega_3^2 - 2\omega_4^2c_s^2\omega_1^3\omega_5\omega_3 +$
$3\omega_4^2v_2^4\omega_1^3\omega_5 + 6\omega_4c_s^2v_2^2\omega_1^3\omega_5\omega_3^2 + 3\omega_4\omega_1^3v_3^4\omega_5\omega_3^2 - 6\omega_4^2v_2^2\omega_1^2\omega_5\omega_3 + 6\omega_4^2v_2^2\omega_1^2\omega_5 + 3\omega_4^2\omega_1^3v_3^2\omega_5\omega_3 - 3\omega_4^2\omega_1^3v_3^2\omega_5 - 6\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_3 + 3v_2^2\omega_1^3\omega_5\omega_3^2 +$
$12\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_3 - 8\omega_4^2c_s^4\omega_1^3\omega_3^2 + 3\omega_4v_2^4\omega_1^3\omega_5\omega_3^2 - 12\omega_4c_s^2v_2^2\omega_1\omega_5\omega_3^2 - 6\omega_4^2\omega_1^2v_3^2\omega_5\omega_3 + 8\omega_4c_s^4\omega_1^2\omega_5\omega_3^2 - 6\omega_4\omega_1^2v_3^4\omega_5\omega_3^2 - 8\omega_4^2c_s^2\omega_1\omega_5\omega_3 -$
$18\omega_4^2c_s^2\omega_1^2v_3^2\omega_5 + 2\omega_4c_s^2\omega_1^3\omega_5\omega_3^2 - 12\omega_4c_s^2\omega_1v_3^2\omega_5\omega_3^2 - 3\omega_4^2v_2^2\omega_1^3\omega_5 + 6\omega_4v_2^2\omega_1^3\omega_5\omega_3^2 - 3\omega_4^2\omega_1^3v_3^4\omega_5\omega_3 - 6\omega_4^2v_3^4\omega_1^2\omega_5 - 3\omega_4\omega_1^3v_3^2\omega_5\omega_3^2 + 6v_2^4\omega_1^2\omega_5\omega_3^2 +$
$12\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_3 + 6\omega_4^2\omega_1^2v_3^2\omega_5 + 3\omega_4^2v_2^2\omega_1^3\omega_5\omega_3 - 6\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_3 + 6\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_3 - 9c_s^2\omega_1^3v_3^2\omega_5\omega_3^2 + 8\omega_4^2c_s^2\omega_1^2\omega_5\omega_3 + 3\omega_4^2\omega_1^3v_3^4\omega_5 +$
$18c_s^2v_2^2\omega_1^2\omega_5\omega_3^2 - 8\omega_4c_s^4\omega_1\omega_5\omega_3^2 - 6\omega_4c_s^2v_2^2\omega_1^2\omega_5\omega_3^2 + 6\omega_4c_s^2\omega_1^3v_3^2\omega_5\omega_3^2 - 6\omega_1^2v_3^2\omega_5\omega_3^2 - 8\omega_4^2c_s^4\omega_1\omega_5\omega_3^2 + 2\omega_4^2c_s^4\omega_1^3\omega_5\omega_3 + 9\omega_4^2c_s^2v_2^2\omega_1^2\omega_5 -$
$3\omega_1^3v_3^4\omega_5\omega_3^2 + 6\omega_4^2v_2^4\omega_1^2\omega_5\omega_3 - 3\omega_4v_2^2\omega_1^3\omega_5\omega_3^2 - 3v_2^4\omega_1^3\omega_5\omega_3^2 - 8\omega_4c_s^2\omega_1^2\omega_5\omega_3^2 + 8\omega_4^2c_s^4\omega_1\omega_5\omega_3 + 6\omega_1^2v_3^4\omega_5\omega_3^2 + 16\omega_4^2c_s^4\omega_5\omega_3^2 + 6\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_3 +$
$9\omega_4^2c_s^2\omega_1^3v_3^2\omega_5 - 18\omega_4^2c_s^2v_2^2\omega_1^2\omega_5 - 2\omega_4c_s^4\omega_1^3\omega_5\omega_3^2 - 32\omega_4^2c_s^4\omega_1\omega_3^2 - 6\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_3^2 + 3\omega_1^3v_3^2\omega_5\omega_3^2 - 6v_2^2\omega_1^2\omega_5\omega_3^2 - 6\omega_4v_2^4\omega_1^2\omega_5\omega_3^2 + 18c_s^2\omega_1^2v_3^2\omega_5\omega_3^2$

$C_{54} = 104\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 104\omega_4^2c_s^2\omega_1^3\omega_3^2 - 56\omega_4^2c_s^2\omega_1v_3^2\omega_2^3\omega_3 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 276\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 +$
$9\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2 + 54c_s^4\omega_1^3\omega_2^3\omega_3^2 - 342\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 - 78\omega_4^2\omega_1^2v_3^4\omega_2^3\omega_3^2 + 48\omega_4^2\omega_1^3v_3^4\omega_3^2 + 6v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 36c_s^2\omega_1^2\omega_2^3\omega_3^2 - 56\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 -$
$6\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2 + 108\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 + 78\omega_4^2\omega_1^3v_3^4\omega_2^2\omega_3^2 - 88\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 + 120\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 - 6v_1^4\omega_4^2\omega_1^2\omega_2^3\omega_3^2 -$
$712\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 - 16\omega_4^2\omega_2^3\omega_3^2 + 12\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 + 16\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3 - 20\omega_4^2\omega_1^3\omega_2\omega_3^2 - 18v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 - 96\omega_4^2\omega_1^2v_3^4\omega_2^2\omega_3^2 + 144\omega_4^2c_s^4\omega_1^3\omega_3^2 -$
$14\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 9\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 + 92\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3^2 + 448\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2 - 368\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 320\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 + 48\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 - 36\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2 +$
$216\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 - 784\omega_4^2c_s^2v_2^2\omega_2^3\omega_3^2 - 92\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 118\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 1232\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3^2 - 56\omega_4^2\omega_1^3v_3^2\omega_3^2 + 36\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 +$
$28\omega_4^2\omega_1\omega_2^3\omega_3^2 - 108\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 + 228\omega_4^2\omega_1v_3^4\omega_2^3\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2 + 152\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 + 6\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^3\omega_3^2 - 144\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 - 36c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2 +$
$184\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 - 288\omega_4^2c_s^4\omega_3^2\omega_3^2 - 18c_s^2\omega_1^3\omega_2^3\omega_3^2 + 72\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3 - 108\omega_4^2c_s^4\omega_1^2\omega_3^2 + 208\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 32\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 - 27\omega_4c_s^4\omega_1^3\omega_2^3\omega_3^2 +$
$120\omega_4^2\omega_1^2v_3^4\omega_2\omega_3^2 - 36\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 - 36\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 + 14\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 168\omega_4^2c_s^4\omega_1\omega_2^3\omega_3 + 72\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2 + 18v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 +$
$18\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3^2 - 108c_s^4\omega_1^2\omega_2^3\omega_3^2 + 160\omega_4^2v_3^2\omega_3^2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 412\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 256\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 + 54\omega_4^2c_s^4\omega_1^3\omega_3^2 - 6v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 +$
$52\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 132\omega_4^2\omega_1^3v_3^4\omega_2\omega_3^2 + 40\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3 + 18\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 + 394\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 + 208\omega_4^2c_s^2\omega_3^2\omega_3^2 + 588\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 -$
$8\omega_4^2\omega_1\omega_2^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^2\omega_3^2 - 24\omega_4^2\omega_1v_3^4\omega_2^2\omega_3^2 + 6v_1^4\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 27\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3 - 72\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 + 18c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 - 136\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 +$
$8\omega_4^2\omega_1^3\omega_3^2 - 460\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2 - 16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 - 9\omega_4c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 + 16\omega_4^2\omega_1^2\omega_2\omega_3^2 - 144\omega_4^2v_3^4\omega_3^2\omega_3^2 + 144\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 - 9\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2\omega_3$

$C_{55} = -18v_1^2\omega_4\omega_2\omega_3 + 2\omega_4\omega_1v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 6\omega_4\omega_1v_3^2\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 12\omega_4c_s^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_2\omega_3 + 9\omega_1\omega_2\omega_3 +$
$18\omega_4c_s^2\omega_1\omega_2\omega_3 - 9\omega_4\omega_1v_3^2\omega_2 - 9\omega_1v_3^2\omega_2\omega_3 + 18v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 + 4\omega_4v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{56} = 10\omega_4c_s^4\omega_1^2\omega_2^2\omega_3 - 18\omega_4c_s^4\omega_1^2\omega_3^2 + 8\omega_4c_s^4\omega_1^3\omega_2 - 168\omega_4\omega_1^2v_3^4\omega_2^2\omega_3 - 3v_1^2\omega_4c_s^2\omega_1^2\omega_3^2\omega_3 + 36c_s^4\omega_1\omega_3^2\omega_3 + 81\omega_4\omega_1^2v_3^2\omega_3^2\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 -$
$54\omega_4c_s^2\omega_1\omega_3^2\omega_3 - 264\omega_4v_3^4\omega_3^2\omega_3 + 144\omega_4c_s^2\omega_1^3v_3^2\omega_3 - 9\omega_4c_s^2\omega_1^3\omega_3^2 - 288\omega_4c_s^2\omega_1^3v_3^2\omega_2\omega_3 - v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 - 312\omega_4c_s^2v_3^2\omega_3^2\omega_3 + 20\omega_4c_s^4\omega_1^2\omega_2^2 -$
$81\omega_4\omega_1^3v_3^2\omega_2^2\omega_3 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 60\omega_4c_s^2\omega_1v_3^2\omega_2^2\omega_3 - 4\omega_4\omega_1\omega_2^2\omega_3 + v_1^4\omega_4\omega_1^3\omega_2^2\omega_3 - 24\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 + 40\omega_4c_s^2\omega_2^2\omega_3 - 8\omega_4c_s^2\omega_1^3\omega_2 +$
$84\omega_4\omega_1^2v_3^2\omega_2^2\omega_3 + 18\omega_4c_s^2\omega_1^2\omega_2^2 + 32\omega_4c_s^2\omega_1\omega_2^2\omega_3 + 7\omega_4\omega_1^3\omega_2^2\omega_3 + 120\omega_4c_s^2\omega_1^2v_3^2\omega_2\omega_3 - 32\omega_4c_s^4\omega_1^3\omega_2\omega_3 - 54\omega_4c_s^2\omega_1^2v_3^2\omega_2^2 + 36c_s^2\omega_1^2\omega_2^2\omega_3 +$
$144\omega_4v_3^2\omega_3^2\omega_3 + 4\omega_4\omega_1^3\omega_3 + 9\omega_4c_s^4\omega_1^3\omega_2^2 - 29\omega_4c_s^4\omega_1^2\omega_3^2\omega_3 - 138\omega_4\omega_1^2v_3^4\omega_3^2\omega_3 + 108c_s^2\omega_1v_3^2\omega_3^2\omega_3 + 432\omega_4c_s^2\omega_1v_3^2\omega_3^2\omega_3 + 14\omega_4\omega_1\omega_3^2\omega_3 -$
$20\omega_4c_s^2\omega_1^2\omega_2^2 - 60\omega_4\omega_1^3v_3^2\omega_3 + 9c_s^4\omega_1^3\omega_3^2\omega_3 + 138\omega_4\omega_1^3v_3^4\omega_2^2\omega_3 - 16\omega_4c_s^2\omega_1^2\omega_2\omega_3 - 18\omega_4c_s^4\omega_1^3\omega_2^2 + 60\omega_4c_s^2\omega_1^2v_3^2\omega_2^2 - 68\omega_4c_s^4\omega_3^2\omega_3 -$
$222\omega_4\omega_1v_3^2\omega_3^2\omega_3 - 8\omega_4\omega_3^2\omega_3 - 6\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 - 240\omega_4\omega_1^3v_3^4\omega_2\omega_3 + 27c_s^2\omega_1^3v_3^2\omega_3^2\omega_3 + 94\omega_4c_s^4\omega_1\omega_3^2\omega_3 + 24\omega_4c_s^2\omega_1v_3^2\omega_3^2 - 36c_s^2\omega_1\omega_3^2\omega_3 -$
$24\omega_4\omega_1v_3^4\omega_2^2\omega_3 - 8\omega_4c_s^2\omega_1\omega_3^2 - 7\omega_4\omega_1^2\omega_3^2\omega_3 - 96\omega_4\omega_1^2v_3^2\omega_2\omega_3 + 16\omega_4c_s^4\omega_1^3\omega_3 - 90\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 - 10\omega_4\omega_1^3\omega_2\omega_3 + 17\omega_4c_s^4\omega_1^3\omega_2^2\omega_3 +$
$24\omega_4c_s^2\omega_1^3v_3^2\omega_2 + 408\omega_4\omega_1v_3^4\omega_2^3\omega_3 + 153\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 + 138\omega_4\omega_1^3v_3^2\omega_2\omega_3 + 96\omega_4\omega_1^3v_3^4\omega_3 - 28\omega_4c_s^4\omega_1\omega_2^2\omega_3 - 54\omega_4c_s^2\omega_1^3v_3^2\omega_2^2 + v_1^2\omega_4\omega_1^2\omega_2^3\omega_3 +$
$24\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 - v_1^4\omega_4\omega_1^2\omega_2^3\omega_3 + 12\omega_4\omega_1v_3^2\omega_2^2\omega_3 + 42\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 36c_s^4\omega_1^2\omega_2^3\omega_3 - 9c_s^2\omega_1^3\omega_2^3\omega_3 + 192\omega_4\omega_1^2v_3^4\omega_2\omega_3 + 27\omega_4c_s^2\omega_1^3v_3^2\omega_3^2 -$
$20\omega_4c_s^2\omega_1^3\omega_3 + 8\omega_4c_s^4\omega_1^2\omega_2\omega_3 + 8\omega_4c_s^4\omega_1\omega_2^3 + 3v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 - 3\omega_4c_s^4\omega_1^3\omega_2^2\omega_3 - 153\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3 - 108c_s^2\omega_1^2v_3^2\omega_3^2\omega_3 - 4\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{57} = -6\omega_4\omega_1v_3^2\omega_3 - 2\omega_4^2v_2^2\omega_1\omega_3 + 3\omega_1v_3^2\omega_3^2 + 2\omega_4^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_1\omega_3^2 - 6\omega_4^2v_3^2 - 6\omega_4^2\omega_1 - 18\omega_4c_s^2\omega_3^2 + 36\omega_4c_s^2\omega_3 - 6\omega_4v_2^2\omega_3^2 - 6\omega_4^2v_2^2 -$
$18\omega_4c_s^2\omega_1\omega_3 + 3\omega_4^2\omega_1v_3^2 - 36\omega_4^2c_s^2 + 12\omega_4^2 + 6v_2^2\omega_3^2 - 6\omega_4^2\omega_3 + 18\omega_4^2c_s^2\omega_3 - 12\omega_4\omega_3 - 2\omega_4\omega_1\omega_3^2 + 3\omega_4^2v_2^2\omega_1 - 6v_3^2\omega_3^2 - 3v_2^2\omega_1\omega_3^2 -$
$6\omega_4^2c_s^2\omega_1\omega_3 + 18\omega_4^2c_s^2\omega_1 + 6\omega_4\omega_3^2 + 6\omega_4\omega_1\omega_3 + 6\omega_4^2v_2^2\omega_3 + 2\omega_4v_2^2\omega_1\omega_3^2 + 12\omega_4v_3^2\omega_3$

$C_{58} = 2\omega_4\omega_1v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 6\omega_4\omega_1v_3^2\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 - 18\omega_4v_2^2\omega_2\omega_3 + 12\omega_4c_s^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_2\omega_3 + 18\omega_4v_2^2\omega_1\omega_3 +$
$9\omega_1\omega_2\omega_3 + 18\omega_4c_s^2\omega_1\omega_2\omega_3 - 9\omega_4\omega_1v_3^2\omega_2 - 9\omega_1v_3^2\omega_2\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 + 4\omega_4v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{59} = -2c_s^2\omega_1 - 36c_s^2\omega_1v_3^2\omega_2 - 9\omega_1v_3^4\omega_2 + 6\omega_1v_3^4 + 24c_s^2\omega_1v_3^2 + 4c_s^4\omega_2 - 12v_3^2\omega_2 + 2c_s^4\omega_1 - 6\omega_1v_3^2 + 48c_s^2v_3^2\omega_2 + 3c_s^2\omega_1\omega_2 - 4c_s^2\omega_2 +$
$12v_3^4\omega_2 + 9\omega_1v_3^2\omega_2 - 3c_s^4\omega_1\omega_2$

$C_{60} = 9\omega_4^2\omega_1^3v_3^4 + \omega_4^2c_s^2\omega_1^3\omega_3^2 + 36\omega_4\omega_1^2v_3^4\omega_3^2 + 24\omega_4^2c_s^4\omega_1^2\omega_3^2 + 36\omega_4c_s^2\omega_1v_3^2\omega_3^2 + 15\omega_4\omega_1^3v_3^2\omega_3^2 + 54\omega_4c_s^2\omega_1^3v_3^2\omega_3 + 12\omega_4^2c_s^2\omega_1^2\omega_3 +$

$3\omega_4^2\omega_1^3v_3^4\omega_3^2 - 36\omega_4^2c_s^2\omega_1v_3^2\omega_3^2 - 12\omega_4c_s^2\omega_1\omega_3^2 - 36\omega_4^2c_s^2\omega_1^3v_3^2\omega_3 + 12\omega_4^2\omega_1^2v_3^2\omega_3^2 + 27\omega_4^2c_s^2\omega_1^3v_3^2 + 3\omega_4^2c_s^4\omega_1^3\omega_3 - 36\omega_4^2\omega_1^2v_3^2\omega_3 - 3\omega_4^2c_s^4\omega_1^3\omega_3^2 - 18\omega_1^2v_3^4\omega_3^2 - 15\omega_4^2\omega_1^3v_3^4\omega_3 + 24\omega_4^2c_s^4\omega_3^2 - 8\omega_4^2c_s^2\omega_1^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1v_3^2\omega_3 - 9\omega_1^3v_3^2\omega_3^2 - 54c_s^2\omega_1^2v_3^2\omega_3^2 + 6\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 - 18\omega_4^2\omega_1^2v_3^4 - 54\omega_4^2c_s^2\omega_1^2v_3^2 - 12\omega_4^2c_s^4\omega_1^2\omega_3 + 12\omega_4c_s^4\omega_1\omega_3^2 - 18\omega_4\omega_1^3v_3^2\omega_3 - 36\omega_4c_s^2\omega_1^3v_3^2\omega_3^2 - 3\omega_4^2c_s^2\omega_1^3\omega_3 - 36\omega_4\omega_1^2v_3^4\omega_3 - 3\omega_4^2\omega_1^3v_3^2\omega_3^2 + 12\omega_4^2c_s^4\omega_1\omega_3 + 18\omega_4^2\omega_1^2v_3^2 - 12\omega_4c_s^4\omega_1^2\omega_3^2 - 3\omega_4c_s^2\omega_1^3\omega_3^2 - 12\omega_4^2\omega_1^2v_3^4\omega_3^2 + 72\omega_4^2c_s^2\omega_1^2v_3^2\omega_3 - 108\omega_4c_s^2\omega_1^2v_3^2\omega_3 - 36\omega_4\omega_1^2v_3^2\omega_3^2 + 12\omega_4^2c_s^2\omega_1\omega_3^2 - 15\omega_4\omega_1^3v_3^4\omega_3^2 - 12\omega_4^2c_s^2\omega_1\omega_3 + 18\omega_4\omega_1^3v_3^4\omega_3 + 12\omega_4c_s^2\omega_1^2\omega_3^2 + 3\omega_4c_s^4\omega_1^3\omega_3^2 - 9\omega_4^2\omega_1^3v_3^2 + 72\omega_4c_s^2\omega_1^2v_3^2\omega_3^2 + 36\omega_4\omega_1^2v_3^2\omega_3 + 36\omega_4^2\omega_1^2v_3^4\omega_3 - 12\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2 + 27c_s^2\omega_1^3v_3^2\omega_3^2 + 18\omega_1^2v_3^2\omega_3^2 - 48\omega_4^2c_s^4\omega_1\omega_3^2 + 15\omega_4^2\omega_1^3v_3^2\omega_3 + 9\omega_1^3v_3^4\omega_3^2$

2.7.4 Conservation of momentum: ρv_2

$$
\begin{aligned}
&v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{v_1v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_2\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_1} + (v_2^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2v_2\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_2v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_3} + \\
&\frac{v_2\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\omega_1\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (6v_1^2\omega_1 - 2\omega_1 + 6c_s^2\omega_1 + 2\omega_2 + 3c_s^2\omega_1\omega_2 - 12c_s^2\omega_2 - 6v_1^2\omega_2)\frac{\delta_l^2}{6\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} + \\
&(\omega_1-\omega_2)\frac{2v_1\delta_l^2\rho}{\omega_1\omega_2\delta_t}\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_2} + (3v_1^2\omega_1 - \omega_1 + c_s^2\omega_1 + \omega_2 - c_s^2\omega_2 - 3v_1^2\omega_2)\frac{\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_1} + \\
&(-2\omega_1 + 4c_s^2\omega_1 + 6v_2^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 - 9v_2^2\omega_1\omega_2 + 12v_2^2\omega_2 - 6c_s^2\omega_1\omega_2 + 8c_s^2\omega_2)\frac{\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + \\
&(2\omega_1 - 3\omega_1\omega_2 + 4\omega_2)\frac{v_2\delta_l^2\rho}{\omega_1\omega_2\delta_t}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-\omega_1 + c_s^2\omega_1 + \omega_2 - 3v_3^2\omega_2 + 3\omega_1v_3^2 - c_s^2\omega_2)\frac{\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_3} + \\
&(\omega_1-\omega_2)\frac{2v_3\delta_l^2\rho}{\omega_1\omega_2\delta_t}\frac{\partial v_3}{\partial x_2}\frac{\partial v_3}{\partial x_3} + (-2\omega_1 + 6c_s^2\omega_1 + 2\omega_2 - 6v_3^2\omega_2 + 6\omega_1v_3^2 + 3c_s^2\omega_1\omega_2 - 12c_s^2\omega_2)\frac{\delta_l^2}{6\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} + \\
&(-2+\omega_1)\frac{c_s^2\delta_l^2}{2\omega_1\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2\rho}{2\omega_1\delta_t}\frac{\partial^2 v_2}{\partial x_1^2} + (v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial^2\rho}{\partial x_1\partial x_2} + \\
&(6v_1^2\omega_1 - 2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 + 3c_s^2\omega_1\omega_2 - 8c_s^2\omega_2 - 6v_1^2\omega_2)\frac{\delta_l^2\rho}{6\omega_1\omega_2\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_2} + \\
&(-2\omega_1 + 6c_s^2\omega_1 + 2v_2^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 - 3v_2^2\omega_1\omega_2 + 4v_2^2\omega_2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2)\frac{v_2\delta_l^2}{6\omega_1\omega_2\delta_t}\frac{\partial^2\rho}{\partial x_2^2} + \\
&(-2\omega_1 + 2c_s^2\omega_1 + 6v_2^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 - 9v_2^2\omega_1\omega_2 + 12v_2^2\omega_2 - 3c_s^2\omega_1\omega_2 + 4c_s^2\omega_2)\frac{\delta_l^2\rho}{6\omega_1\omega_2\delta_t}\frac{\partial^2 v_2}{\partial x_2^2} + \\
&(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1v_3^2 - 3c_s^2\omega_2)\frac{v_3\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial^2\rho}{\partial x_2\partial x_3} + \\
&(-2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 - 6v_3^2\omega_2 + 6\omega_1v_3^2 + 3c_s^2\omega_1\omega_2 - 8c_s^2\omega_2)\frac{\delta_l^2\rho}{6\omega_1\omega_2\delta_t}\frac{\partial^2 v_3}{\partial x_2\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2\rho}{2\omega_1\delta_t}\frac{\partial^2 v_2}{\partial x_3^2} + \\
&(-1+v_1^2+3c_s^2)\frac{v_1v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+3v_1^2+c_s^2)\frac{v_2\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_1\frac{v_1\delta_l^3\rho}{12\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_2}{\partial x_1^3} + C_2\frac{\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + \\
&C_3\frac{v_1\delta_l^3\rho}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} - \frac{c_s^2v_2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + C_4\frac{v_1v_2\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} + C_5\frac{v_2\delta_l^3\rho}{12\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_6\frac{v_1\delta_l^3\rho}{6\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + \\
&C_7\frac{\delta_l^3}{12\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C_8\frac{v_2\delta_l^3\rho}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_9\frac{v_3\delta_l^3\rho}{4\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_3} - \frac{c_s^2v_2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + C_{10}\frac{v_1v_3\delta_l^3}{3\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3} + \\
&C_{11}\frac{v_3\delta_l^3\rho}{6\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} + C_{12}\frac{v_1\delta_l^3\rho}{6\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + C_{13}\frac{v_2v_3\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + C_{14}\frac{v_3\delta_l^3\rho}{6\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3} + \\
&C_{15}\frac{v_2\delta_l^3\rho}{12\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{c_s^2v_2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C_{16}\frac{v_1\delta_l^3\rho}{4\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_3^2} + C_{17}\frac{\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} - \frac{c_s^2v_2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + \\
&C_{18}\frac{v_3\delta_l^3\rho}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + (-1+v_3^2+3c_s^2)\frac{v_2v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_{19}\frac{v_3\delta_l^3\rho}{12\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_2}{\partial x_3^3} + (-1+3v_3^2+c_s^2)\frac{v_2\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + \\
&C_{20}\frac{v_2\delta_l^4}{72\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + (10v_1^2\omega_1 - 4\omega_1 + 6c_s^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2 + 20v_1^2\omega_2 - 15v_1^2\omega_1\omega_2)\frac{v_1v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} \\
&+ C_{21}\frac{\delta_l^4\rho}{24\omega_4^2\omega_1^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^4} + C_{22}\frac{v_1\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C_{23}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{24}\frac{v_1v_2\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + \\
&C_{25}\frac{v_2\delta_l^4}{36\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{26}\frac{v_1v_2\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{27}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{28}\frac{v_1\delta_l^4}{36\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^2} + \\
&C_{29}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^2} + C_{30}\frac{v_1v_2\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_3^2} + C_{31}\frac{v_2\delta_l^4}{36\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C_{32}\frac{\delta_l^4\rho}{36\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + \\
&(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1v_3^2 - 3c_s^2\omega_2)\frac{v_1v_2v_3\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + \\
&(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1v_3^2 - 3c_s^2\omega_2)\frac{v_2v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{33}\frac{v_1v_3\delta_l^4\rho}{8\omega_4^2\omega_1\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_3} + C_{34}\frac{v_1v_2\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C_{35}\frac{v_3\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{36}\frac{v_1v_3\delta_l^4\rho}{6\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{37}\frac{v_2v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{38}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_5\omega_3^2\omega_2^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{39}\frac{v_1v_2v_3\delta_l^4}{6\omega_1^3\omega_2^3\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{40}\frac{v_2v_3\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{41}\frac{v_1v_3\delta_l^4\rho}{6\omega_4\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} \\
&+ C_{42}\frac{v_1v_2\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{43}\frac{v_3\delta_l^4}{36\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{44}\frac{v_2v_3\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{45}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + \\
&(3v_1^2\omega_1 - 2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 - 3v_3^2\omega_2 + 3\omega_1v_3^2 + 6c_s^2\omega_1\omega_2 - 14c_s^2\omega_2 - 3v_1^2\omega_2)\frac{c_s^2v_2\delta_l^4}{36\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} +
\end{aligned}
$$

$$(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{46}\frac{\delta_l^4\rho}{8\omega_4^2\omega_1^3\omega_5\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2} +$$
$$(-\omega_1 + 3c_s^2\omega_1 + \omega_2 - v_3^2\omega_2 + \omega_1 v_3^2 - 3c_s^2\omega_2)\frac{v_2v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{47}\frac{v_1\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{48}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_5\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{49}\frac{v_1v_2\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{50}\frac{v_1v_3\delta_l^4\rho}{6\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{51}\frac{v_2\delta_l^4}{36\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}$$
$$+ C_{52}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{53}\frac{v_2v_3\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + (v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1v_2v_3\delta_t^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} +$$
$$C_{54}\frac{v_2v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{55}\frac{v_1v_3\delta_l^4\rho}{8\omega_4^2\omega_1\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_3^3} + (v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1v_2\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$C_{56}\frac{v_3\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{57}\frac{v_2v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{58}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{59}\frac{v_2\delta_l^4}{72\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$C_{60}\frac{\delta_l^4\rho}{24\omega_4^2\omega_1^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_3^4} +$$
$$(-4\omega_1 + 6c_s^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 + 20v_3^2\omega_2 + 10\omega_1 v_3^2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2 - 15\omega_1 v_3^2\omega_2)\frac{v_2v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

$C_1 = 9\omega_4c_s^2\omega_1 + 6v_1^2\omega_4\omega_3 + 6\omega_4 + 9c_s^2\omega_1\omega_3 - 6v_1^2\omega_4 + 3v_1^2\omega_4\omega_1 - 6v_1^2\omega_3 + 18\omega_4c_s^2\omega_3 + 3v_1^2\omega_1\omega_3 - 6\omega_4c_s^2\omega_1\omega_3 - 18c_s^2\omega_3 - 18\omega_4c_s^2 - 6\omega_4\omega_3 + 6\omega_3 - 3\omega_1\omega_3 - 2v_1^2\omega_4\omega_1\omega_3 - 3\omega_4\omega_1 + 2\omega_4\omega_1\omega_3$

$C_2 = 3v_1^2\omega_1^2\omega_2 - 2c_s^4\omega_1^2\omega_2 - 14c_s^4\omega_2^2 - 18v_1^2c_s^2\omega_2^2 - 4v_1^4\omega_2^2 - 2c_s^2\omega_1^2 + 2c_s^2\omega_1^2\omega_2 - 3v_1^4\omega_1^2\omega_2 - 15v_1^2c_s^2\omega_1^2\omega_2 - c_s^4\omega_1^2\omega_2^2 - 2v_1^2\omega_1^2 + 14c_s^4\omega_1\omega_2^2 + 6v_1^2c_s^2\omega_1\omega_2 - 3v_1^2\omega_1\omega_2^2 + 4v_1^2\omega_2^2 + 2v_1^4\omega_1\omega_2 + 2c_s^2\omega_2^2 + 12v_1^2c_s^2\omega_1^2 + 3v_1^4\omega_1\omega_2^2 - 2c_s^2\omega_1\omega_2^2 + 2v_1^4\omega_1^2 + 2c_s^4\omega_1^2 + 15v_1^2c_s^2\omega_1\omega_2^2 - 2v_1^2\omega_1\omega_2$

$C_3 = -5\omega_1\omega_2^2 - 11v_1^2\omega_1^2\omega_2 + 8c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 - 2\omega_1\omega_2 + 8v_1^2\omega_1^2 + 5\omega_1^2\omega_2 + 11v_1^2\omega_1\omega_2^2 - 14v_1^2\omega_2^2 + 6\omega_2^2 + 2c_s^2\omega_1\omega_2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 6v_1^2\omega_1\omega_2$

$C_4 = -3\omega_1\omega_2^2 - 3v_1^2\omega_1^2\omega_2 + 2v_2^2\omega_1^2 + 12c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1\omega_2 - 4v_2^2\omega_1\omega_2 + 2v_1^2\omega_1^2 + 3\omega_1^2\omega_2 + 3v_1^2\omega_1\omega_2^2 - 4v_1^2\omega_2^2 + 2\omega_2^2 - 6c_s^2\omega_1\omega_2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2v_2^2\omega_2^2 + 2v_1^2\omega_1\omega_2$

$C_5 = -8\omega_4\omega_1^2\omega_3 + 18c_s^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 - 12\omega_4c_s^2\omega_1^2\omega_2 - 3\omega_4v_2^2\omega_1^2\omega_2^2\omega_3 - 8\omega_4\omega_1\omega_2^2\omega_3 + 8\omega_4\omega_1\omega_2^2 + 12v_1^2\omega_4\omega_1^2\omega_3 + 12\omega_4c_s^2\omega_1\omega_2^2\omega_3 + 18v_1^2\omega_4\omega_1\omega_2^2\omega_3 - 8\omega_4v_2^2\omega_1\omega_2^2 - 12v_2^2\omega_1\omega_2^2\omega_3 + 16\omega_4c_s^2\omega_2^2\omega_3 + 18\omega_4c_s^2\omega_1^2\omega_2^2 + 4\omega_4v_2^2\omega_1^2\omega_3 - 12\omega_4c_s^2\omega_1^2\omega_2\omega_3 + 12\omega_1\omega_2^2\omega_3 - 18v_1^2\omega_4\omega_1^2\omega_2\omega_3 - 11\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 - 24\omega_4c_s^2\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 4\omega_4c_s^2\omega_1\omega_2\omega_3 + 6v_2^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4v_2^2\omega_2^2\omega_3 + 6\omega_4v_2^2\omega_1^2\omega_2^2 + 16\omega_4c_s^2\omega_1^2\omega_3 - 6\omega_1^2\omega_2^2\omega_3 + 12v_1^2\omega_4\omega_1\omega_2\omega_3 - 36c_s^2\omega_1\omega_2^2\omega_3 - 4\omega_4v_2^2\omega_1^2\omega_2 - 2\omega_4v_2^2\omega_1^2\omega_2\omega_3 - 6\omega_4\omega_1^2\omega_2^2 - 4\omega_4\omega_1\omega_2\omega_3 + 2\omega_4v_2^2\omega_1\omega_2^2\omega_3 - 24v_1^2\omega_4\omega_2^2\omega_3 + 3\omega_4\omega_1^2\omega_2^2\omega_3$

$C_6 = -2\omega_1\omega_2^2 - 2v_1^2\omega_1^2\omega_2 - 4\omega_1^2\omega_3 - 4c_s^2\omega_2^2\omega_3 - 4c_s^2\omega_1\omega_2\omega_3 + 6v_2^2\omega_1^2\omega_3 + v_1^2\omega_1\omega_2^2\omega_3 - 6c_s^2\omega_1^2\omega_2 + \omega_1^2\omega_2\omega_3 - 2v_1^2\omega_2^2\omega_3 - v_1^2\omega_1^2\omega_2\omega_3 - \omega_1\omega_2^2\omega_3 + 2\omega_1^2\omega_2 - 12v_2^2\omega_1\omega_2\omega_3 + 2v_1^2\omega_1\omega_2^2 + 4\omega_1\omega_2\omega_3 + 2v_1^2\omega_1^2\omega_3 + 3c_s^2\omega_1\omega_2^2\omega_3 + 6c_s^2\omega_1\omega_2^2 - 3c_s^2\omega_1^2\omega_2\omega_3 + 6v_2^2\omega_2^2\omega_3 + 8c_s^2\omega_1^2\omega_3$

$C_7 = 72c_s^2v_2^2\omega_2^2 + 24v_2^2\omega_1\omega_2^2 - 4c_s^4\omega_1^2\omega_2 + 8c_s^4\omega_2^2 - c_s^2\omega_1^2\omega_2^2 + 16v_2^4\omega_1\omega_2 - 48c_s^2v_2^2\omega_1^2\omega_2 - 4v_2^2\omega_1^2 + 24c_s^2v_2^2\omega_1^2\omega_2^2 - 4c_s^2\omega_1^2 + 4c_s^2\omega_1^2\omega_2 - 24v_2^4\omega_1\omega_2^2 - 16v_2^2\omega_1\omega_2 + c_s^4\omega_1^2\omega_2^2 + 16v_2^4\omega_2^2 + 12v_2^2\omega_1^2\omega_2 - 8c_s^4\omega_1\omega_2^2 + 4v_2^4\omega_1^2 - 96c_s^2v_2^2\omega_1\omega_2^2 - 8c_s^2\omega_2^2 + 7v_2^4\omega_1^2\omega_2^2 + 8c_s^2\omega_1\omega_2^2 - 12v_2^4\omega_1^2\omega_2 - 16v_2^2\omega_2^2 + 48c_s^2v_2^2\omega_1\omega_2 + 24c_s^2v_2^2\omega_1^2 + 4c_s^4\omega_1^2 - 7v_2^2\omega_1^2\omega_2^2$

$C_8 = 16\omega_1\omega_2^2 - 40v_2^2\omega_1\omega_2^2 + 5c_s^2\omega_1^2\omega_2^2 + 8v_2^2\omega_1^2 + 8c_s^2\omega_1^2 - 4\omega_1^2 - 12c_s^2\omega_1^2\omega_2 - 8\omega_1\omega_2 + 24v_2^2\omega_1\omega_2 + 8\omega_1^2\omega_2 - 20v_2^2\omega_1^2\omega_2 - 12\omega_2^2 + 8c_s^2\omega_1\omega_2 + 20c_s^2\omega_2^2 - 24c_s^2\omega_1\omega_2^2 + 28v_2^2\omega_2^2 - 4\omega_1^2\omega_2^2 + 11v_2^2\omega_1^2\omega_2^2$

$C_9 = 3\omega_4c_s^2\omega_1 + 2\omega_4 - 3c_s^2\omega_1\omega_3 - \omega_1v_3^2\omega_3 + 6c_s^2\omega_3 - 6\omega_4c_s^2 + \omega_4\omega_1v_3^2 - 2\omega_3 + \omega_1\omega_3 - 2\omega_4v_3^2 + 2v_3^2\omega_3 - \omega_4\omega_1$

$C_{10} = v_3^2\omega_2^2 + 6c_s^2\omega_1^2 - 2\omega_1^2 + \omega_1^2v_3^2 + 4\omega_1\omega_2 + v_1^2\omega_1^2 + v_1^2\omega_2^2 - 2\omega_2^2 - 12c_s^2\omega_1\omega_2 + 6c_s^2\omega_2^2 - 2\omega_1v_3^2\omega_2 - 2v_1^2\omega_1\omega_2$

$C_{11} = -2\omega_4v_3^2\omega_2^2\omega_3 - 4\omega_4\omega_1^2\omega_3 + 3\omega_4\omega_1^2v_3^2\omega_2^2 - 9c_s^2\omega_1^2\omega_2^2\omega_3 + \omega_4\omega_1^2\omega_2\omega_3 - 6\omega_4c_s^2\omega_1^2\omega_2 - \omega_4\omega_1\omega_2^2\omega_3 + 4\omega_4\omega_1\omega_2^2 + 6v_1^2\omega_4\omega_1^2\omega_3 + 3\omega_4c_s^2\omega_1\omega_2^2\omega_3 + 6\omega_1v_3^2\omega_2^2\omega_3 - 4\omega_4c_s^2\omega_2^2\omega_3 + 9\omega_4c_s^2\omega_1^2\omega_2^2 - 3\omega_4c_s^2\omega_1^2\omega_2\omega_3 - 6\omega_1\omega_2^2\omega_3 - 2\omega_4\omega_1^2v_3^2\omega_2 - 12\omega_4c_s^2\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_4c_s^2\omega_1\omega_2\omega_3 - \omega_4\omega_1^2v_3^2\omega_2\omega_3 + 8\omega_4c_s^2\omega_1^2\omega_3 + 3\omega_1^2\omega_2^2\omega_3 - 12v_1^2\omega_4\omega_1\omega_2\omega_3 + 18c_s^2\omega_1\omega_2^2\omega_3 - 4\omega_4\omega_1v_3^2\omega_2^2 - 3\omega_1^2v_3^2\omega_2^2\omega_3 - 3\omega_4\omega_1^2\omega_2^2 + 4\omega_4\omega_1\omega_2\omega_3 + \omega_4\omega_1v_3^2\omega_2^2\omega_3 + 2\omega_4\omega_1^2v_3^2\omega_3 + 6v_1^2\omega_4\omega_2^2\omega_3$

$C_{12} = -4v_1^2\omega_4\omega_1\omega_2^2 + 6\omega_4v_3^2\omega_2^2\omega_3 - 4\omega_4\omega_1^2\omega_3 - 9c_s^2\omega_1^2\omega_2^2\omega_3 + \omega_4\omega_1^2\omega_2\omega_3 - 6\omega_4c_s^2\omega_1^2\omega_2 - \omega_4\omega_1\omega_2^2\omega_3 + 4\omega_4\omega_1\omega_2^2 + 2v_1^2\omega_4\omega_1^2\omega_3 - 12\omega_4\omega_1v_3^2\omega_2\omega_3 + 6v_1^2\omega_1\omega_2^2\omega_3 + 3\omega_4c_s^2\omega_1\omega_2^2\omega_3 + v_1^2\omega_4\omega_1\omega_2^2\omega_3 - 4\omega_4c_s^2\omega_2^2\omega_3 + 9\omega_4c_s^2\omega_1^2\omega_2^2 - 3\omega_4c_s^2\omega_1^2\omega_2\omega_3 - 6\omega_1\omega_2^2\omega_3 - v_1^2\omega_4\omega_1^2\omega_2\omega_3 - 3v_1^2\omega_1^2\omega_2^2\omega_3 - 12\omega_4c_s^2\omega_1\omega_2^2 - 2v_1^2\omega_4\omega_1^2\omega_2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_4c_s^2\omega_1\omega_2\omega_3 + 8\omega_4c_s^2\omega_1^2\omega_3 + 3\omega_1^2\omega_2^2\omega_3 + 18c_s^2\omega_1\omega_2^2\omega_3 - 3\omega_4\omega_1^2\omega_2^2 + 4\omega_4\omega_1\omega_2\omega_3 + 6\omega_4\omega_1^2v_3^2\omega_3 + 3v_1^2\omega_4\omega_1^2\omega_2^2 - 2v_1^2\omega_4\omega_2^2\omega_3$

$C_{13} = -4v_3^2\omega_2^2 - 3\omega_1\omega_2^2 + 2v_2^2\omega_1^2 - 3\omega_1^2v_3^2\omega_2 + 12c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1^2v_3^2 + 2\omega_1\omega_2 - 4v_2^2\omega_1\omega_2 + 3\omega_1^2\omega_2 + 3\omega_1v_3^2\omega_2^2 + 2\omega_2^2 - 6c_s^2\omega_1\omega_2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2v_2^2\omega_2^2 + 2\omega_1v_3^2\omega_2$

$C_{14} = -2\omega_1\omega_2^2 - 4\omega_1^2\omega_3 - \omega_1^2v_3^2\omega_2\omega_3 - 4c_s^2\omega_2^2\omega_3 - 4c_s^2\omega_1\omega_2\omega_3 + 6v_2^2\omega_1^2\omega_3 - 2\omega_1^2v_3^2\omega_2 - 2v_3^2\omega_2^2\omega_3 - 6c_s^2\omega_1^2\omega_2 + \omega_1^2\omega_2\omega_3 + \omega_1v_3^2\omega_2^2\omega_3 - \omega_1\omega_2^2\omega_3 + 2\omega_1^2\omega_2 + 2\omega_1v_3^2\omega_2^2 - 12v_2^2\omega_1\omega_2\omega_3 + 4\omega_1\omega_2\omega_3 + 2\omega_1^2v_3^2\omega_3 + 3c_s^2\omega_1\omega_2^2\omega_3 + 6c_s^2\omega_1\omega_2^2 - 3c_s^2\omega_1^2\omega_2\omega_3 + 6v_2^2\omega_2^2\omega_3 + 8c_s^2\omega_1^2\omega_3$

$C_{15} = -24\omega_4v_3^2\omega_2^2\omega_3 - 8\omega_4\omega_1^2\omega_3 + 18c_s^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 - 12\omega_4c_s^2\omega_1^2\omega_2 - 3\omega_4v_2^2\omega_1^2\omega_2^2\omega_3 - 8\omega_4\omega_1\omega_2^2\omega_3 + 8\omega_4\omega_1\omega_2^2 + 12\omega_4\omega_1v_3^2\omega_2\omega_3 + 12\omega_4c_s^2\omega_1\omega_2^2\omega_3 - 8\omega_4v_2^2\omega_1\omega_2^2 - 12v_2^2\omega_1\omega_2^2\omega_3 + 16\omega_4c_s^2\omega_2^2\omega_3 + 18\omega_4c_s^2\omega_1^2\omega_2^2 + 4\omega_4v_2^2\omega_1^2\omega_3 - 12\omega_4c_s^2\omega_1^2\omega_2\omega_3 + 12\omega_1\omega_2^2\omega_3 - 11\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 -$

$24\omega_4c_s^2\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 4\omega_4c_s^2\omega_1\omega_2\omega_3 - 18\omega_4\omega_1^2v_3^2\omega_2\omega_3 + 6v_2^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4v_2^2\omega_2^2\omega_3 + 6\omega_4v_2^2\omega_1^2\omega_2^2 + 16\omega_4c_s^2\omega_1^2\omega_3 - 6\omega_1^2\omega_2^2\omega_3 - 36c_s^2\omega_1\omega_2^2\omega_3 - 4\omega_4v_2^2\omega_1^2\omega_2 - 2\omega_4v_2^2\omega_1^2\omega_2\omega_3 - 6\omega_4\omega_1^2\omega_2^2 - 4\omega_4\omega_1\omega_2\omega_3 + 18\omega_4\omega_1v_3^2\omega_2^2\omega_3 + 12\omega_4\omega_1^2v_3^2\omega_3 + 2\omega_4v_2^2\omega_1\omega_2^2\omega_3 + 3\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{16} = 3\omega_4c_s^2\omega_1 + 2\omega_4 - 3c_s^2\omega_1\omega_3 - 2v_1^2\omega_4 + v_1^2\omega_4\omega_1 + 2v_1^2\omega_3 - v_1^2\omega_1\omega_3 + 6c_s^2\omega_3 - 6\omega_4c_s^2 - 2\omega_3 + \omega_1\omega_3 - \omega_4\omega_1$

$C_{17} = 4v_3^2\omega_2^2 - 2c_s^4\omega_1^2\omega_2 - 14c_s^4\omega_2^2 + 3\omega_1v_3^4\omega_2^2 + 15c_s^2\omega_1v_3^2\omega_2^2 + 3\omega_1^2v_3^2\omega_2 + 6c_s^2\omega_1v_3^2\omega_2 - 2c_s^2\omega_1^2 + 2\omega_1v_3^4\omega_2 + 2c_s^2\omega_1^2\omega_2 - 2\omega_1^2v_3^2 - c_s^4\omega_1^2\omega_2^2 - 3\omega_1v_3^2\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 15c_s^2\omega_1^2v_3^2\omega_2 - 3\omega_1^2v_3^4\omega_2 - 4v_3^4\omega_2^2 + 2\omega_1^2v_3^4 + 12c_s^2\omega_1^2v_3^2 + 2c_s^2\omega_2^2 - 2c_s^2\omega_1\omega_2^2 - 18c_s^2v_3^2\omega_2^2 - 2\omega_1v_3^2\omega_2 + 2c_s^4\omega_1^2$

$C_{18} =$
$-14v_3^2\omega_2^2 - 5\omega_1\omega_2^2 - 11\omega_1^2v_3^2\omega_2 + 8c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 + 8\omega_1^2v_3^2 - 2\omega_1\omega_2 + 5\omega_1^2\omega_2 + 11\omega_1v_3^2\omega_2^2 + 6\omega_2^2 + 2c_s^2\omega_1\omega_2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 6\omega_1v_3^2\omega_2$

$C_{19} = 9\omega_4c_s^2\omega_1 + 6\omega_4 - 2\omega_4\omega_1v_3^2\omega_3 + 9c_s^2\omega_1\omega_3 + 18\omega_4c_s^2\omega_3 + 3\omega_1v_3^2\omega_3 - 6\omega_4c_s^2\omega_1\omega_3 - 18c_s^2\omega_3 - 18\omega_4c_s^2 - 6\omega_4\omega_3 + 3\omega_4\omega_1v_3^2 + 6\omega_3 - 3\omega_1\omega_3 - 6\omega_4v_3^2 - 6v_3^2\omega_3 - 3\omega_4\omega_1 + 2\omega_4\omega_1\omega_3 + 6\omega_4v_3^2\omega_3$

$C_{20} = -6v_1^2\omega_1 - 2c_s^2\omega_1 + 12v_1^4\omega_2 + 48v_1^2c_s^2\omega_2 + 4c_s^4\omega_2 + 2c_s^4\omega_1 - 36v_1^2c_s^2\omega_1\omega_2 + 6v_1^4\omega_1 + 24v_1^2c_s^2\omega_1 - 9v_1^4\omega_1\omega_2 + 3c_s^2\omega_1\omega_2 - 4c_s^2\omega_2 - 12v_1^2\omega_2 - 3c_s^4\omega_1\omega_2 + 9v_1^2\omega_1\omega_2$

$C_{21} = -12v_1^4\omega_4^2\omega_1^2\omega_3^2 + \omega_4^2c_s^2\omega_1^3\omega_3^2 - 36v_1^2\omega_4^2c_s^2\omega_1^3\omega_3 + 24\omega_4^2c_s^4\omega_1^2\omega_3^2 + 15v_1^2\omega_4\omega_1^3\omega_3^2 + 12\omega_4^2c_s^2\omega_1^2\omega_3 - 15v_1^4\omega_4^2\omega_1^3\omega_3 - 12\omega_4c_s^2\omega_1\omega_3^2 + 36v_1^2\omega_4\omega_1^2\omega_3 - 12v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2 + 3\omega_4^2c_s^4\omega_1^3\omega_3 - 36v_1^2\omega_4\omega_1^2\omega_3^2 + 36v_1^2\omega_4c_s^2\omega_1\omega_3^2 + 72v_1^2\omega_4^2c_s^2\omega_1^2\omega_3 - 3\omega_4^2c_s^4\omega_1^3\omega_3^2 + 24\omega_4^2c_s^4\omega_3^2 - 8\omega_4^2c_s^2\omega_1^2\omega_3^2 + 3v_1^4\omega_4^2\omega_1^3\omega_3^2 + 6v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 - 12\omega_4^2c_s^4\omega_1^2\omega_3 + 12\omega_4c_s^4\omega_1\omega_3^2 - 18v_1^2\omega_4\omega_1^3\omega_3 + 36v_1^4\omega_4^2\omega_1^2\omega_3 - 3\omega_4^2c_s^2\omega_1^3\omega_3 + 12\omega_4^2c_s^4\omega_1\omega_3 - 54v_1^2\omega_4^2c_s^2\omega_1^2 + 54v_1^2\omega_4c_s^2\omega_1^3\omega_3 + 12v_1^2\omega_4^2\omega_1^2\omega_3^2 - 18v_1^4\omega_1^2\omega_3^2 - 12\omega_4c_s^4\omega_1^2\omega_3^2 - 9v_1^2\omega_1^3\omega_3^2 - 3\omega_4c_s^2\omega_1^3\omega_3^2 - 18v_1^4\omega_4^2\omega_1^2 - 15v_1^4\omega_4\omega_1^3\omega_3^2 + 72v_1^2\omega_4c_s^2\omega_1^2\omega_3^2 + 15v_1^2\omega_4^2\omega_1^3\omega_3 + 27v_1^2\omega_4^2c_s^2\omega_1^3 + 36v_1^2\omega_4^2c_s^2\omega_1\omega_3 + 12\omega_4^2c_s^2\omega_1\omega_3^2 + 9v_1^4\omega_4^2\omega_1^3 - 54v_1^2c_s^2\omega_1^2\omega_3^2 - 36v_1^4\omega_4\omega_1^2\omega_3 - 12\omega_4^2c_s^2\omega_1\omega_3 + 12\omega_4c_s^2\omega_1^2\omega_3^2 + 18v_1^2\omega_1^2\omega_3^2 + 36v_1^4\omega_4\omega_1^2\omega_3^2 + 18v_1^2\omega_4^2\omega_1^2 - 108v_1^2\omega_4c_s^2\omega_1^2\omega_3 - 3v_1^2\omega_4^2\omega_1^3\omega_3^2 + 3\omega_4c_s^4\omega_1^3\omega_3^2 + 9v_1^4\omega_1^3\omega_3^2 - 36v_1^2\omega_4^2c_s^2\omega_1\omega_3^2 + 18v_1^4\omega_4\omega_1^3\omega_3 + 27v_1^2c_s^2\omega_1^3\omega_3^2 - 48\omega_4^2c_s^4\omega_1\omega_3^2 - 36v_1^2\omega_4c_s^2\omega_1^3\omega_3^2 - 36v_1^2\omega_4^2\omega_1^2\omega_3 - 9v_1^2\omega_4^2\omega_1^3$

$C_{22} = 56\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 104\omega_4^2c_s^2\omega_1^3\omega_3^2 + 160v_1^2\omega_4^2\omega_2^3\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 276\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 9\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2 + 54c_s^4\omega_1^3\omega_2^2\omega_3^2 - 342\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 - 412v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 92v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 36c_s^2\omega_1^2\omega_2^3\omega_3^2 - 6\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2 + 108\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 - 88\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 152v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 + 6\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 120\omega_4^2c_s^4\omega_1^2\omega_2\omega_3 - 78v_1^4\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 72v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 - 132v_1^4\omega_4^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2\omega_2^3\omega_3^2 + 16v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 12\omega_4^2c_s^4\omega_2^2\omega_3^2 - 20\omega_4^2\omega_1^3\omega_2\omega_3^2 - 460v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 144\omega_4^2c_s^4\omega_1^3\omega_3^2 - 712v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 14\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 36v_1^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 9\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 + 6\omega_4^2v_2^4\omega_1^3\omega_2^2\omega_3^2 + 48v_1^4\omega_4^2\omega_1^3\omega_3^2 - 368\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 18\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 48\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 320v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 - 96v_1^4\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 216\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 + 40v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 + 36v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 - 118\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 104v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 28\omega_4^2\omega_1\omega_2^3\omega_3^2 - 9v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 - 144v_1^4\omega_4^2\omega_2^3\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_2^3 + 1232v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 - 144\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 + 120v_1^4\omega_4^2\omega_1^2\omega_2\omega_3^2 - 18\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 + 184\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 288\omega_4^2c_s^4\omega_2^2\omega_3^2 - 18c_s^2\omega_1^3\omega_2^3\omega_3^2 - 108\omega_4^2c_s^4\omega_1^2\omega_3^2 - 136v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 208\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 27\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 + 14\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 24v_1^4\omega_4^2\omega_1\omega_2^2\omega_3^2 - 168\omega_4^2c_s^4\omega_1\omega_2^3\omega_3 + 72\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2 + 394v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 18\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3^2 - 108c_s^4\omega_1^2\omega_2^2\omega_3^2 + 32v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 - 36v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 6\omega_4^2v_2^4\omega_1^2\omega_3^2\omega_3^2 - 784v_1^2\omega_4^2c_s^2\omega_3^2\omega_3^2 - 9v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 + 54\omega_4^2c_s^4\omega_1^3\omega_3^2 - 92v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 + 52\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 56v_1^2\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 56v_1^2\omega_4^2\omega_1^3\omega_3^2 + 208\omega_4^2c_s^2\omega_2^3\omega_3^2 + 588\omega_4^2c_s^4\omega_1\omega_3^2\omega_3^2 - 36v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 8\omega_4^2\omega_1\omega_2^2\omega_3^2 - 6\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^2\omega_3^2 + 78v_1^4\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 27\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3 - 72\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3 + 8\omega_4^2\omega_1^3\omega_3^2 - 256v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 - 16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 18v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 6v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 + 16\omega_4^2\omega_1^2\omega_2\omega_3^2 + 144\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 + 18v_1^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 56v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 + 448v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 228v_1^4\omega_4^2\omega_1\omega_2^3\omega_3^2$

$C_{23} = 10\omega_4c_s^4\omega_1^2\omega_2^2\omega_3 - 18\omega_4c_s^4\omega_1^2\omega_3^2 + 60v_1^2\omega_4c_s^2\omega_1^2\omega_2^2 - 222v_1^2\omega_4\omega_1\omega_3^2\omega_3 + 8\omega_4c_s^4\omega_1^3\omega_2 - 153v_1^2\omega_4c_s^2\omega_1^2\omega_3^2\omega_3 - 288v_1^2\omega_4c_s^2\omega_1^3\omega_2\omega_3 + 36c_s^4\omega_1\omega_2^3\omega_3 + 408v_1^4\omega_4\omega_1\omega_2^3\omega_3 + \omega_4v_2^4\omega_1^3\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 - 54\omega_4c_s^2\omega_1\omega_2^3\omega_3 - 9\omega_4c_s^2\omega_1^3\omega_3^2 - 81v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 + 24v_1^2\omega_4c_s^2\omega_1^3\omega_2 + 20\omega_4c_s^4\omega_1^2\omega_2^2 - 54v_1^2\omega_4c_s^2\omega_1^2\omega_3^2 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 4\omega_4\omega_1\omega_2^2\omega_3 + 138v_1^4\omega_4\omega_1^3\omega_2^2\omega_3 - 264v_1^4\omega_4\omega_2^3\omega_3 - 24\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 - 108v_1^2c_s^2\omega_1^2\omega_2^3\omega_3 + 40\omega_4c_s^2\omega_2^3\omega_3 - 8\omega_4c_s^2\omega_1^3\omega_2 + 18\omega_4c_s^2\omega_1^2\omega_3^2 + 32\omega_4c_s^2\omega_1\omega_2^2\omega_3 + 7\omega_4\omega_1^3\omega_2^3\omega_3 - 24v_1^4\omega_4\omega_1\omega_2^2\omega_3 - 32\omega_4c_s^4\omega_1^3\omega_2\omega_3 - 312v_1^2\omega_4c_s^2\omega_2^3\omega_3 + 36c_s^2\omega_1^2\omega_2^3\omega_3 + 12v_1^2\omega_4\omega_1\omega_2^2\omega_3 + 4\omega_4\omega_1^3\omega_3 - 54v_1^2\omega_4c_s^2\omega_1^3\omega_2^2 + 9\omega_4c_s^4\omega_1^3\omega_2^2 - 29\omega_4c_s^4\omega_1^2\omega_2^3\omega_3 - 90v_1^2\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 + 192v_1^4\omega_4\omega_1^2\omega_2\omega_3 + 14\omega_4\omega_1\omega_2^3\omega_3 - 20\omega_4c_s^2\omega_1^2\omega_2^2 + 9c_s^4\omega_1^3\omega_2^2\omega_3 - 60v_1^2\omega_4\omega_1^3\omega_3 - 16\omega_4c_s^2\omega_1^2\omega_2\omega_3 + \omega_4v_2^2\omega_1^2\omega_2^3\omega_3 - 96v_1^2\omega_4\omega_1^2\omega_2\omega_3 + 27v_1^2\omega_4c_s^2\omega_1^3\omega_2^2 + 3\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 18\omega_4c_s^4\omega_1^3\omega_2^2 - 68\omega_4c_s^4\omega_2^3\omega_3 - 168v_1^4\omega_4\omega_1^2\omega_2^2\omega_3 - 8\omega_4\omega_2^3\omega_3 + 144v_1^2\omega_4c_s^2\omega_1^3\omega_3 + 27v_1^2c_s^2\omega_1^3\omega_2^3\omega_3 - 6\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 - 60v_1^2\omega_4c_s^2\omega_1\omega_2^2\omega_3 + 84v_1^2\omega_4\omega_1^2\omega_2^2\omega_3 + 94\omega_4c_s^4\omega_1\omega_2^3\omega_3 - 3\omega_4c_s^2v_2^2\omega_1^2\omega_3^2\omega_3 - 36c_s^2\omega_1\omega_2^3\omega_3 - \omega_4v_2^2\omega_1^3\omega_2^2\omega_3 - 8\omega_4c_s^2\omega_1\omega_3^2 - 7\omega_4\omega_1^2\omega_2^3\omega_3 + 16\omega_4c_s^4\omega_1^3\omega_3 - 10\omega_4\omega_1^3\omega_2\omega_3 + 144v_1^2\omega_4\omega_2^3\omega_3 + 17\omega_4c_s^4\omega_1^3\omega_2^2\omega_3 + 120v_1^2\omega_4c_s^2\omega_1^2\omega_2\omega_3 + 138v_1^2\omega_4\omega_1^3\omega_2\omega_3 + 24v_1^2\omega_4c_s^2\omega_1\omega_2^3 + 432v_1^2\omega_4c_s^2\omega_1\omega_2^2\omega_3 - 28\omega_4c_s^4\omega_1\omega_2^2\omega_3 + 81v_1^2\omega_4\omega_1^2\omega_2^3\omega_3 + 24\omega_4c_s^2\omega_1^2\omega_3^2\omega_3 - 240v_1^4\omega_4\omega_1^3\omega_2\omega_3 - 138v_1^4\omega_4\omega_1^2\omega_3^2\omega_3 + 42\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 36c_s^4\omega_1^2\omega_3^2\omega_3 - 9c_s^2\omega_1^3\omega_3^2\omega_3 - 20\omega_4c_s^2\omega_1^3\omega_3 + 96v_1^4\omega_4\omega_1^3\omega_3 + 8\omega_4c_s^4\omega_1^2\omega_2\omega_3 + 8\omega_4c_s^4\omega_1\omega_3^2 + 153v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 - 3\omega_4c_s^4\omega_1^3\omega_2^2\omega_3 + 108v_1^2c_s^2\omega_1\omega_2^3\omega_3 - \omega_4v_2^4\omega_1^2\omega_2^3\omega_3 - 4\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{24} = 4v_1^2\omega_4\omega_2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 - 18\omega_4v_2^2\omega_2\omega_3 + 12\omega_4c_s^2\omega_1\omega_3 - 9v_1^2\omega_4\omega_1\omega_2 + 6\omega_4c_s^2\omega_2\omega_3 + 18\omega_4v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4c_s^2\omega_1\omega_2\omega_3 - 9v_1^2\omega_1\omega_2\omega_3 + 6v_1^2\omega_4\omega_1\omega_2\omega_3 + 2v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{25} = -4\omega_4^2v_2^2\omega_2^3\omega_3^2 + 28\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 16\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 - 52\omega_4^2c_s^2\omega_1^3\omega_3^2 + 24v_1^2\omega_4^2\omega_2^3\omega_3^2 - 102\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 9\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2 - 28\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 + 54c_s^4\omega_1^3\omega_2^3\omega_3^2 - 119\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 + 27v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 36c_s^2\omega_1^2\omega_2^3\omega_3^2 - 3\omega_4^2c_s^2\omega_1^3\omega_3^2\omega_3^2 + 108\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 - 30v_1^2\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2 + 4\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 66v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 + 28\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 - 28\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3 + 96\omega_4^2c_s^4\omega_1^2\omega_2\omega_3 - 4\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3^2 - 27v_1^4\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 36v_1^4\omega_4^2\omega_1^3\omega_2\omega_3^2 + 3\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 + 4\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 + 4\omega_4^2\omega_2^3\omega_3^2 + 24\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 + 4\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 - 4\omega_4^2\omega_1^3\omega_2\omega_3^2 - 138v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 - 9\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^3\omega_3 + 72\omega_4^2c_s^4\omega_1^3\omega_3^2 - 324v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 18c_s^2v_2^2\omega_1^3\omega_3^2\omega_3^2 + 9\omega_4^2c_s^2\omega_1^3\omega_3^2\omega_3 + 24v_1^4\omega_4^2\omega_1^3\omega_3^2 - 12v_1^2\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 9\omega_4c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 - 58\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2 + 8\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 - 12\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 216v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 - 36v_1^4\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 108\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3 - 8\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 36v_1^2\omega_4^2v_2^2\omega_2^3\omega_3^2 - 48v_1^2\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 - 25\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 24v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 4\omega_4^2\omega_1\omega_2^3\omega_3^2 - 20\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 60v_1^4\omega_4^2\omega_2^3\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2 + 18\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 + 324v_1^2\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2 + 4\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 72\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 - 32\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 49\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 - 18c_s^2\omega_1^3\omega_2^3\omega_3^2 - 72\omega_4^2c_s^4\omega_1^2\omega_3^3 + 12v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 74\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 27\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 - 12\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 + 36v_1^4\omega_4^2\omega_1\omega_2^2\omega_3^2 - 84\omega_4^2c_s^4\omega_1\omega_3^2\omega_3 + 4\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 + 32\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 + 138v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 12\omega_4^2c_s^2\omega_1^3\omega_2^2 + 15\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 - 108c_s^4\omega_1^2\omega_3^2\omega_3^2 + 12v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 + 24v_1^2\omega_4^2v_2^2\omega_1^3\omega_3^2 - 32\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 + 60v_1^2\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 216v_1^2\omega_4^2c_s^2\omega_3^2\omega_3^2 + 54\omega_4^2c_s^4\omega_1^3\omega_3^2 - 27v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 16\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 24\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2 - 48v_1^2\omega_4^2\omega_1^3\omega_3^2 + 20\omega_4^2c_s^2\omega_3^2\omega_3^2 + 16\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 78\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 - 4\omega_4^2v_2^2\omega_1^3\omega_3^2 - 4\omega_4^2\omega_1\omega_2^2\omega_3^2 + 16\omega_4^2c_s^2v_2^2\omega_2^3\omega_3^2 + 24\omega_4^2c_s^2\omega_1^2\omega_3^2 + 27v_1^4\omega_4^2\omega_1^3\omega_2^2\omega_3^2 -$

$27\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3 - 36\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 - 36c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 4\omega_4^2\omega_1^3\omega_3^2 - 42v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 + 4\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 36\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 - 30v_1^2\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2 - 4\omega_4^2\omega_1^2\omega_2\omega_3^2 - 4\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3 + 35\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 + 36\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 + 4\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2 + 72v_1^4\omega_4^2\omega_1\omega_2^3\omega_3^2$

$C_{26} = -18c_s^2\omega_1^3\omega_2 - 23\omega_1^3\omega_2^2\omega_3 + 141v_1^2\omega_1\omega_2^3\omega_3 + 36c_s^2\omega_1^2\omega_2^2 - 60\omega_1\omega_2^3\omega_3 - 6v_2^2\omega_1\omega_2^2 + 6\omega_1\omega_2^2 - 9v_2^2\omega_1\omega_2^3\omega_3 + 50v_1^2\omega_1^3\omega_2^2\omega_3 - 114v_1^2\omega_2^3\omega_3 + 60v_1^2\omega_1\omega_2^2\omega_3 - 12v_2^2\omega_1^2\omega_2\omega_3 - 42c_s^2\omega_1^2\omega_2^3\omega_3 + 6\omega_1^2\omega_2\omega_3 - 108c_s^2\omega_1^3\omega_2\omega_3 - 12v_2^2\omega_1\omega_2^2\omega_3 + 6v_1^2\omega_1^2\omega_2\omega_3 - 12\omega_1\omega_2^2\omega_3 + 12v_2^2\omega_1^3\omega_3 - 36\omega_1^3\omega_3 - 66c_s^2\omega_2^3\omega_3 - 66v_1^2\omega_1^2\omega_2^2\omega_3 + 108c_s^2\omega_1\omega_2^3\omega_3 + 84c_s^2\omega_1^3\omega_3 + 42\omega_2^3\omega_3 + 12v_2^2\omega_2^3\omega_3 + 18v_2^2\omega_1^2\omega_2^2\omega_3 + 42c_s^2\omega_1^3\omega_2^2\omega_3 + 12\omega_1^2\omega_2^2\omega_3 - 6v_2^2\omega_1^3\omega_2 - 50v_1^2\omega_1^2\omega_2^2\omega_3 - 75v_1^2\omega_1^3\omega_2\omega_3 + 6\omega_1^3\omega_2 - 18c_s^2\omega_1\omega_2^2 + 48v_1^2\omega_1^3\omega_3 + 23\omega_1^2\omega_2^2\omega_3 - 18c_s^2\omega_1^2\omega_2\omega_3 + 48\omega_1^3\omega_2\omega_3 - 12\omega_1^2\omega_2^2 + 12v_2^2\omega_1^2\omega_2^2 - 9v_2^2\omega_1^3\omega_2\omega_3$

$C_{27} =$
$56\omega_4c_s^4\omega_1^2\omega_2^2\omega_3 + \omega_4v_2^2\omega_1^2\omega_2^3\omega_3^2 - 6v_1^2\omega_4\omega_1\omega_2^3\omega_3 - 90v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 + 6\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 12\omega_4v_2^2\omega_1^3\omega_2\omega_3^2 - 68\omega_4c_s^4\omega_2^3\omega_3^2 - 36v_1^2\omega_4c_s^2\omega_1^3\omega_2\omega_3 + 6v_1^4\omega_4\omega_1\omega_2^3\omega_3 - 54v_1^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 12v_1^4\omega_4\omega_1^2\omega_2\omega_3^2 - 90v_1^2\omega_4v_2^2\omega_1\omega_2^3\omega_3^2 + 18c_s^4\omega_1^3\omega_2^3\omega_3^2 - 4\omega_4\omega_1\omega_2^3\omega_3^2 - 8\omega_4c_s^2\omega_1\omega_2^3\omega_3 - 48v_1^2\omega_4\omega_1^3\omega_3^2 + 32\omega_4c_s^2\omega_1^2\omega_2\omega_3^2 - 36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 - 14\omega_4c_s^4\omega_1^3\omega_2\omega_3^2 + 72c_s^2\omega_1^2\omega_2^3\omega_3^2 - 108v_1^2\omega_4c_s^2\omega_2^3\omega_3^2 + 48\omega_4c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 - 14\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 + 72v_1^2\omega_4v_2^2\omega_1^3\omega_3^2 - 18v_1^4\omega_1^2\omega_2^3\omega_3^2 + 216c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 + 36v_1^2\omega_4\omega_1\omega_2^2\omega_3^2 + 4\omega_4\omega_1^3\omega_3^2 + 54v_1^2\omega_4c_s^2\omega_1^2\omega_3^2 + 24v_1^2\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 + 54\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 + 36v_1^4\omega_4\omega_1^3\omega_2^2\omega_3 + 32\omega_4c_s^2\omega_1\omega_2^2\omega_3^2 + 12\omega_4c_s^2v_2^2\omega_1^3\omega_3^2 - 18v_1^4\omega_4\omega_1^3\omega_2^2 + 36\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 + 54v_1^2c_s^2\omega_1^2\omega_2^3\omega_3 + 12v_1^4\omega_4\omega_1\omega_2^2\omega_3^2 + 18v_1^2\omega_1^3\omega_2^2\omega_3 + 18v_1^4\omega_4\omega_1^2\omega_3^2 - 4\omega_4\omega_1\omega_2^2\omega_3^2 - 12\omega_4v_2^2\omega_1^3\omega_3^2 - 144v_1^2\omega_4v_2^2\omega_1\omega_2^2\omega_3^2 + 9v_1^4\omega_4\omega_1^3\omega_2^2\omega_3^2 - 48v_1^4\omega_4\omega_2^3\omega_3^2 - 18v_1^2\omega_1^3\omega_2^2\omega_3^2 + 28\omega_4c_s^2\omega_2^3\omega_3^2 - 2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 - 54v_1^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 8\omega_4c_s^4\omega_1^3\omega_2\omega_3 + 54c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 - 9v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2 + 60\omega_4c_s^2v_2^2\omega_1\omega_2^3\omega_3 - 48\omega_4c_s^2v_2^2\omega_1^2\omega_2\omega_3^2 - 24\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2 - 54v_1^2\omega_4c_s^2\omega_1^3\omega_2^2 + 18v_1^4\omega_1^2\omega_2^3\omega_3 - 36\omega_4c_s^4\omega_1^2\omega_2^3\omega_3 + 54v_1^2\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 + 72c_s^4\omega_1\omega_2^3\omega_3^2 + \omega_4v_2^4\omega_1^3\omega_2^3\omega_3^2 + 54v_1^4\omega_4\omega_1\omega_2^3\omega_3^2 - 18\omega_4c_s^2\omega_1^3\omega_2^3\omega_3 - 36v_1^2\omega_4v_2^2\omega_1^2\omega_2\omega_3^2 - 4\omega_4\omega_1^2\omega_2\omega_3^2 - 18v_1^2\omega_1\omega_2^3\omega_3^2 - 18\omega_4c_s^2\omega_1\omega_2^2\omega_3^2 - 24v_1^2\omega_4\omega_1\omega_2^3\omega_3^2 - 18v_1^4\omega_1^2\omega_2^2\omega_3^2 + 28\omega_4c_s^4\omega_1^2\omega_2^2\omega_3^2 - 30v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 - 90\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 84\omega_4c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 - 174v_1^2\omega_4c_s^2\omega_1^3\omega_2\omega_3^2 + 6v_1^4\omega_4\omega_1^2\omega_2^2\omega_3 + 54v_1^2c_s^2\omega_1\omega_2^3\omega_3^2 - \omega_4v_2^4\omega_1^2\omega_2^3\omega_3^2 - 56\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2^2\omega_3^2 + 180v_1^2\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2 - 20\omega_4c_s^2\omega_1^3\omega_3^2 + 24\omega_4c_s^2v_2^2\omega_1^3\omega_2\omega_3 - 18c_s^2\omega_1^3\omega_2^3\omega_3^2 - 6v_1^2\omega_4\omega_1^2\omega_2^2\omega_3 + 12\omega_4v_2^2\omega_1\omega_2^2\omega_3^2 + 24v_1^4\omega_4\omega_1^3\omega_3^2 - 28\omega_4c_s^4\omega_1^2\omega_2\omega_3^2 + 8\omega_4c_s^4\omega_1\omega_2^3\omega_3 - 126\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 + 30v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 - 12\omega_4v_2^2\omega_2^3\omega_3^2 - 3\omega_4c_s^4\omega_1^3\omega_2^3\omega_3^2 - 36v_1^4\omega_4\omega_1^3\omega_2\omega_3^2 + 18v_1^2\omega_1^2\omega_2^3\omega_3^2 + 2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 + 54v_1^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 18\omega_4c_s^2\omega_1^3\omega_2\omega_3^2 - 9v_1^4\omega_4\omega_1^2\omega_2^3\omega_3^2 - 72c_s^4\omega_1^2\omega_2^3\omega_3^2 + 66\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 18v_1^4\omega_1^3\omega_2^2\omega_3 - 36\omega_4c_s^4\omega_1^3\omega_2^2\omega_3 + 66v_1^2\omega_4\omega_1^3\omega_2\omega_3^2 + 150v_1^2\omega_4c_s^2\omega_1\omega_2^3\omega_3^2 + 9v_1^2\omega_4\omega_1^2\omega_2^3\omega_3^2 + 18v_1^2\omega_4\omega_1^3\omega_2^2 + 12\omega_4v_2^2\omega_1^2\omega_2\omega_3^2 - 28\omega_4c_s^4\omega_1\omega_2^2\omega_3^2 + 132\omega_4c_s^2v_2^2\omega_1^2\omega_2\omega_3 + 12v_1^2\omega_4\omega_2^3\omega_3^2 + 12v_1^2\omega_4\omega_1^3\omega_2\omega_3 + 2\omega_4c_s^4\omega_1^3\omega_2^2\omega_3^2 + 18v_1^4\omega_1^3\omega_2^2\omega_3^2 - 12v_1^2\omega_4c_s^2\omega_1^2\omega_2\omega_3^2 - 18v_1^2\omega_4\omega_1^2\omega_3^2 - 18v_1^2\omega_4c_s^2\omega_1\omega_2^3\omega_3 + 12\omega_4v_2^2\omega_1\omega_2^3\omega_3^2 + 36v_1^2\omega_4\omega_1^2\omega_2^3\omega_3 + 36\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 - 54v_1^2c_s^2\omega_1^3\omega_2^2\omega_3 - 12v_1^4\omega_4\omega_1^3\omega_2\omega_3 - 18v_1^2\omega_1^2\omega_2^3\omega_3 + 16\omega_4c_s^4\omega_1^3\omega_3^2 - 36v_1^4\omega_4\omega_1^2\omega_2^3\omega_3 - 8\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 4\omega_4\omega_1^3\omega_2\omega_3^2 - 90v_1^2\omega_4v_2^2\omega_1^3\omega_2\omega_3^2 - 6\omega_4c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 12v_1^2\omega_4c_s^2\omega_1\omega_2^3\omega_3^2 + 76\omega_4c_s^4\omega_1\omega_2^3\omega_3^2 + 18v_1^4\omega_1\omega_2^3\omega_3^2 - 216c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 - 42v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2 - 72c_s^2\omega_1\omega_2^3\omega_3^2 - 96\omega_4c_s^2v_2^2\omega_2^3\omega_3^2 - 6\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 90v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 + 18\omega_4c_s^4\omega_1^3\omega_2^3\omega_3 - \omega_4v_2^2\omega_1^3\omega_2^2\omega_3^2 - 18v_1^4\omega_4\omega_1^2\omega_2^2\omega_3^2 + 108v_1^2\omega_4v_2^2\omega_2^3\omega_3^2 + 4\omega_4\omega_2^3\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 + 132v_1^2\omega_4c_s^2\omega_1^3\omega_3^2 + 18v_1^2\omega_1^2\omega_2^2\omega_3^2$

$C_{28} = -48v_2^2\omega_1^3\omega_3^2 + 24v_1^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 8\omega_1\omega_2^2\omega_3^2 - 36v_2^4\omega_1^3\omega_2\omega_3^2 - 12c_s^2\omega_1^2\omega_2^3 + 4\omega_1^3\omega_3^2 + 72c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 4c_s^2\omega_1^2\omega_2^2\omega_3 + 20c_s^2\omega_2^3\omega_3^2 + 24c_s^4\omega_1\omega_2^3\omega_3 + 48v_2^2\omega_1\omega_2^2\omega_3^2 - 36c_s^4\omega_1^2\omega_2\omega_3^2 - 2v_1^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 4v_1^2\omega_1^2\omega_2\omega_3^2 + 96v_1^2v_2^2\omega_1\omega_2^3\omega_3^2 + 5c_s^2\omega_1^2\omega_3^2\omega_3^2 - 4\omega_1^2\omega_2\omega_3^2 + 108c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 + 56c_s^2\omega_1^3\omega_2\omega_3^2 + 54c_s^4\omega_1^3\omega_2^2\omega_3 + 12v_1^2c_s^2\omega_1^2\omega_2^3 - 36c_s^4\omega_1^3\omega_2^2 - 8v_1^2\omega_1\omega_2^2\omega_3^2 - 4v_1^2c_s^2\omega_1^3\omega_2\omega_3 + 24v_1^2v_2^2\omega_1^3\omega_3^2 - 24v_2^2\omega_1^2\omega_2\omega_3^2 - 20v_1^2c_s^2\omega_2^3\omega_3^2 - 18v_1^2c_s^2\omega_1^2\omega_2^3\omega_3 + 36c_s^4\omega_1^2\omega_2^3 + 6c_s^4\omega_1^3\omega_2^2\omega_3^2 - 12v_1^2c_s^2\omega_1^3\omega_2^2 - 20v_1^2c_s^2\omega_1^3\omega_2\omega_3^2 + 24v_2^4\omega_1^3\omega_3^2 - 60v_2^2\omega_1\omega_2^3\omega_3^2 - 36c_s^4\omega_2^3\omega_3^2 + 8v_1^2\omega_2^3\omega_3^2 - v_1^2\omega_1^3\omega_2^2\omega_3^2 - 2v_1^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 24v_1^2v_2^2\omega_1^2\omega_2\omega_3^2 + 72v_2^4\omega_1^2\omega_2^2\omega_3^2 + 18c_s^2\omega_1^2\omega_2^3\omega_3 + 8\omega_1\omega_2^3\omega_3^2 + 4c_s^2\omega_1^3\omega_2\omega_3 + 42c_s^4\omega_1\omega_2^3\omega_3^2 - 4v_1^2c_s^2\omega_1^2\omega_2^2\omega_3 - 24v_2^2\omega_1^3\omega_2^2\omega_3^2 - 8v_1^2\omega_1\omega_2^3\omega_3^2 + 12c_s^2\omega_1^3\omega_2^2 - 216c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 + 24v_1^2v_2^2\omega_1\omega_2^2\omega_3^2 + \omega_1^3\omega_2^2\omega_3^2 - 34c_s^2\omega_1^2\omega_2^2\omega_3^2 + 22v_1^2c_s^2\omega_1\omega_2^3\omega_3^2 + 24v_2^2\omega_1^2\omega_2^3\omega_3^2 - 12c_s^4\omega_1^2\omega_2\omega_3 + 84v_2^2\omega_1^3\omega_2\omega_3^2 - 4v_1^2\omega_1^3\omega_3^2 - \omega_1^2\omega_2^3\omega_3^2 + 72c_s^4\omega_1^3\omega_3^2 + 40c_s^2\omega_1^2\omega_2\omega_3^2 - 72v_2^4\omega_1\omega_2^2\omega_3^2 - 8c_s^2\omega_1\omega_2^3\omega_3 + 48v_2^4\omega_2^3\omega_3^2 - 4\omega_1^3\omega_2\omega_3^2 + v_1^2\omega_1^2\omega_2^3\omega_3^2 + 2v_1^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 84c_s^4\omega_1^3\omega_2\omega_3^2 + 4v_1^2\omega_1^3\omega_2\omega_3^2 - 6c_s^4\omega_1^2\omega_2^3\omega_3^2 - 8c_s^2\omega_1\omega_2^2\omega_3^2 + 216c_s^2v_2^2\omega_1^3\omega_3^2 - 48v_1^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 18c_s^2\omega_1^3\omega_2^2\omega_3 + 216c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 36v_1^4\omega_1\omega_2^3\omega_3^2 - 5c_s^2\omega_1^3\omega_2^2\omega_3^2 - 4\omega_1^2\omega_2^2\omega_3^2 + 18v_1^2c_s^2\omega_1^3\omega_2^2\omega_3 - 52c_s^2\omega_1^3\omega_3^2 - 12c_s^4\omega_1^3\omega_2\omega_3 - 8\omega_2^3\omega_3^2 + 8v_1^2c_s^2\omega_1\omega_2^2\omega_3^2 - 54c_s^4\omega_1^2\omega_3\omega_3 + 24v_2^2\omega_2^2\omega_3^2 - 24v_2^2\omega_1^2\omega_2^2\omega_3^2 - 48v_1^2v_2^2\omega_1^3\omega_2\omega_3^2 - 72c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 16v_1^2c_s^2\omega_1^3\omega_3^2 - 22c_s^2\omega_1\omega_2^3\omega_3^2 - 72v_1^2v_2^2\omega_2^3\omega_3^2 - 324c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 24v_1^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 8v_1^2c_s^2\omega_1\omega_2^3\omega_3 - 4v_1^2c_s^2\omega_1^2\omega_2\omega_3^2 + 42c_s^4\omega_1^2\omega_2^2\omega_3^2 + 4v_1^2\omega_1^2\omega_2^2\omega_3^2$

$C_{29} = -288\omega_4v_2^2\omega_1^2\omega_2^3\omega_3^2 - 48\omega_4^2v_2^2\omega_2^3\omega_3^2 - 24\omega_4^2v_2^4\omega_1\omega_2^3\omega_3 - 32\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 108\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 96\omega_4^2v_2^4\omega_1^2\omega_2\omega_3^2 + 264\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 - 40\omega_4^2c_s^2\omega_1^3\omega_3^2 + 144v_1^2\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 24\omega_4^2v_2^4\omega_1^3\omega_2^3\omega_3^2 + 72\omega_4^2v_2^2\omega_1^2\omega_3^2 - 108v_2^4\omega_1^2\omega_2^3\omega_3^2 + 48v_1^2\omega_4^2\omega_2^3\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 + 288\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 28\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 + 54\omega_4^2v_2^4\omega_1^3\omega_2^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 18\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2 - 36\omega_4v_2^4\omega_1^3\omega_2^2\omega_3 + 336\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 + 60\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3 + 86\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 + 24v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 108\omega_4^2v_2^4\omega_1^3\omega_2^2\omega_3 + 6v_1^2\omega_4^2\omega_1^2\omega_3^2\omega_3 - 72\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 + 576v_1^2\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2 + 64\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 96\omega_4^2v_2^4\omega_1\omega_2^2\omega_3^2 + 24v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 + 324\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 + 72\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3 + 8\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 40\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 + 264\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3^2 - 54v_2^2\omega_1^3\omega_2^3\omega_3^2 + 72v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 + 72\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 + 204\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2\omega_2^3\omega_3^2 + 48v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 - 36\omega_4^2v_2^4\omega_1^3\omega_2^2 - 117\omega_4v_2^4\omega_1^3\omega_2^3\omega_3^2 + 20\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 + 192\omega_4^2v_2^4\omega_2^3\omega_3^2 - 216\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3 - 852\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 - 72\omega_4v_2^4\omega_1\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^3\omega_2\omega_3^2 + 12v_2^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 - 72\omega_4^2v_2^4\omega_1^2\omega_3^2 + 24\omega_4^2v_2^2\omega_1^3\omega_2\omega_3 - 297\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^3\omega_3 + 32\omega_4^2c_s^2\omega_1^3\omega_3^2 - 12v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 108\omega_4v_2^4\omega_1^3\omega_2^3\omega_3 - 2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 162c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 - 54\omega_4^2v_2^2\omega_1^3\omega_3^2 + 38\omega_4^2v_2^4\omega_1^2\omega_2^3\omega_3^2 + 36\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2 + 144v_1^2\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 297\omega_4c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 + 48\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 168\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 16\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 24v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 + 36\omega_4v_2^4\omega_1^3\omega_2^2\omega_3^2 - 36\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 + 240\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 48v_2^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 72\omega_4c_s^2\omega_1\omega_2^3\omega_3^2 - 432v_2^2\omega_4^2v_2^2\omega_2^3\omega_3^2 + 180\omega_4v_2^2\omega_1^2\omega_3^2\omega_3 + 144v_1^2\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 - 108\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 288\omega_4^2v_2^4\omega_1\omega_3^2\omega_3^2 + 36\omega_4^2v_2^2\omega_1^3\omega_2^2 + 24v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 117\omega_4^2v_2^4\omega_1^3\omega_2^2\omega_3 + 16\omega_4^2\omega_1\omega_2^3\omega_3^2 - 492\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 + 108v_2^2\omega_1^2\omega_2^3\omega_3^2 - 24\omega_4^2v_2^2\omega_1^3\omega_3^2\omega_3^2 + 288\omega_4v_2^4\omega_1^2\omega_2^3\omega_3^2 + 162\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2 - 12v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 - 144\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 + 16\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 + 24\omega_4^2v_2^2\omega_1\omega_2^3\omega_3 + 174\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 - 36\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 80\omega_4^2c_s^4\omega_2^3\omega_3^2 - 60\omega_4^2v_2^4\omega_1^2\omega_2^2\omega_3 + 24v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 - 540\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 + 36\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 48\omega_4^2v_2^4\omega_1^3\omega_3^2 + 36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3 + 18\omega_4c_s^4\omega_1^3\omega_2^3\omega_3^2 + 72\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 + 2\omega_4^2\omega_1^3\omega_2^3\omega_3^2 - 108\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2 + 16\omega_4^2c_s^4\omega_1\omega_2^3\omega_3 - 144\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 - 56\omega_4^2c_s^4\omega_1^2\omega_2\omega_3 - 108\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3 - 12v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 6\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3^2 - 108\omega_4^2v_2^2\omega_1^3\omega_2\omega_3 - 108\omega_4^2v_2^4\omega_1^3\omega_2\omega_3^2 - 108\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 48v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 + 144v_1^2\omega_4^2v_2^2\omega_1^3\omega_3^2 + 117\omega_4v_2^2\omega_1^3\omega_2^3\omega_3^2 + 54v_2^4\omega_1^3\omega_2^3\omega_3^2 - 40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 + 40\omega_4^2v_2^4\omega_1^2\omega_2^3\omega_3^2 - 288v_1^2\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 24v_1^2\omega_4^2c_s^2\omega_2^3\omega_3^2 - 24\omega_4^2v_2^4\omega_1^3\omega_2\omega_3 - 108\omega_4v_2^2\omega_1^3\omega_2^3\omega_3 - 6v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 + 216\omega_4^2v_2^4\omega_1^2\omega_3^2\omega_3 - 12\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 72\omega_4v_2^2\omega_1\omega_2^3\omega_3^2 + 48v_1^2\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 216\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2 - 24v_1^2\omega_4^2\omega_1^3\omega_3^2 - 36\omega_4v_2^4\omega_1^2\omega_2^3 + 8\omega_4^2c_s^2\omega_2^3\omega_3^2 - 492\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 172\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 - 72v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 96\omega_4^2v_2^2\omega_1^3\omega_3^2 + 16\omega_4^2\omega_1\omega_2^3\omega_3^2 + 432\omega_4^2c_s^2v_2^2\omega_2^3\omega_3^2 - 86\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 18\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3 - 144\omega_4^2v_2^4\omega_1^2\omega_2^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 + 72\omega_4c_s^4\omega_1\omega_2^3\omega_3^2 - 324c_s^2v_2^2\omega_1^2\omega_3^2\omega_3 - 144v_1^2\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 8\omega_4^2\omega_1^3\omega_3^2 - 48v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 - 16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 648\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 - 288v_1^2\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 - 36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2\omega_3^2 + 117\omega_4^2v_2^2\omega_1^3\omega_2^3\omega_3 - 72\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3 - 2\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 - 96v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 - 180\omega_4v_2^4\omega_1^2\omega_2^3\omega_3 - 96v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 468\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3 + 96\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2$

$C_{30} = -18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 - 5\omega_1^3\omega_2^2\omega_3 + 81c_s^2\omega_1^2\omega_2^2\omega_3 + 27v_1^2\omega_1\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2^2 + 3\omega_1\omega_2^3\omega_3 + 9v_1^2\omega_1^3\omega_2^2 - 12\omega_1\omega_2^3 - 66v_2^2\omega_1\omega_2^3\omega_3 + 5v_1^2\omega_1^3\omega_2^2\omega_3 - 24v_1^2\omega_2^3\omega_3 - 6v_1^2\omega_1^3\omega_2 + 6v_1^2\omega_1\omega_2^2\omega_3 - 9v_1^2\omega_1^2\omega_2^3 - 12v_2^2\omega_1^2\omega_2\omega_3 - 15c_s^2\omega_1^2\omega_2^3\omega_3 + 6\omega_1^2\omega_2\omega_3 - 108c_s^2\omega_1^3\omega_2\omega_3 - 120v_2^2\omega_1\omega_2^2\omega_3 - 6v_1^2\omega_1^2\omega_2^2 + 6v_1^2\omega_1^2\omega_2\omega_3 + 42\omega_1\omega_2^2\omega_3 + 27c_s^2\omega_1^3\omega_2^2 + 48v_2^2\omega_1^3\omega_3 - 36\omega_1^3\omega_3 - 12c_s^2\omega_2^3\omega_3 - 9v_1^2\omega_1^2\omega_2^2\omega_3 + 27c_s^2\omega_1\omega_2^3\omega_3 + 84c_s^2\omega_1^3\omega_3 + 12v_1^2\omega_1\omega_2^3 -$

$12\omega_2^3\omega_3 - 9\omega_1^3\omega_2^2 + 84v_2^2\omega_2^3\omega_3 + 132v_2^2\omega_1^2\omega_2^2\omega_3 + 15c_s^2\omega_1^3\omega_2^2\omega_3 - 51\omega_1^2\omega_2^2\omega_3 - 54c_s^2\omega_1\omega_2^2\omega_3 - 5v_1^2\omega_1^2\omega_2^3\omega_3 - 18v_1^2\omega_1^3\omega_2\omega_3 + 6\omega_1^3\omega_2 + 9\omega_1^2\omega_2^3 + 36c_s^2\omega_1\omega_2^3 + 12v_1^2\omega_1^3\omega_3 + 5\omega_1^2\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2\omega_3 + 48\omega_1^3\omega_2\omega_3 + 6\omega_1^2\omega_2^2 - 66v_2^2\omega_1^3\omega_2\omega_3$

$C_{31} = -8c_s^2\omega_1^3\omega_2 + 656c_s^2v_2^2\omega_1\omega_2^2\omega_3 + 8\omega_1^3\omega_2^2\omega_3 + 152c_s^2\omega_1^2\omega_2^2\omega_3 - 372c_s^4\omega_1\omega_2^3\omega_3 - 98v_2^2\omega_1^3\omega_2^2\omega_3 + 760c_s^2v_2^2\omega_2^3\omega_3 - 102c_s^2v_2^2\omega_1^3\omega_2^3\omega_3 - 264v_2^4\omega_1^2\omega_2^2\omega_3 + 440c_s^2v_2^2\omega_1^2\omega_2\omega_3 + 16c_s^2\omega_1^2\omega_2^2 - 28\omega_1\omega_2^3\omega_3 + 82c_s^4\omega_1^3\omega_2^2\omega_3 + 24v_2^4\omega_1^3\omega_3 + 216c_s^4\omega_2^3\omega_3 + 328v_2^2\omega_1\omega_2^3\omega_3 + 30v_2^2\omega_1^3\omega_2^3\omega_3 + 24c_s^4\omega_1^3\omega_2 + 72c_s^4\omega_1\omega_2^2\omega_3 - 104v_2^2\omega_1^2\omega_2\omega_3 - 16c_s^2v_2^2\omega_1^2\omega_2^2 - 3\omega_1^3\omega_2^3\omega_3 - 156c_s^2\omega_1^2\omega_2^3\omega_3 - 1472c_s^2v_2^2\omega_1\omega_2^3\omega_3 + 8\omega_1^2\omega_2\omega_3 + 122c_s^2\omega_1^3\omega_2\omega_3 + 72c_s^4\omega_1^2\omega_2\omega_3 - 176v_2^2\omega_1\omega_2^2\omega_3 + 8c_s^2v_2^2\omega_1^3\omega_2 - 15c_s^4\omega_1^3\omega_2^3\omega_3 - 48c_s^4\omega_1^2\omega_2^2 + 8\omega_1\omega_2^2\omega_3 - 28v_2^2\omega_1^3\omega_3 - 84v_2^4\omega_1^3\omega_2\omega_3 + 404c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 + 4\omega_1^3\omega_3 + 180v_2^4\omega_1^2\omega_2^3\omega_3 - 184c_s^2\omega_2^3\omega_3 + 8c_s^2v_2^2\omega_1\omega_2^3 - 120c_s^4\omega_1^2\omega_2^2\omega_3 + 90v_2^4\omega_1^3\omega_2^2\omega_3 + 808c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 + 320c_s^2\omega_1\omega_2^3\omega_3 - 464c_s^2v_2^2\omega_1^3\omega_2\omega_3 - 52c_s^2\omega_1^3\omega_3 + 24c_s^4\omega_1\omega_3^2 + 16\omega_2^3\omega_3 - 160v_2^2\omega_2^3\omega_3 + 280v_2^2\omega_1^2\omega_2^2\omega_3 - 300v_2^2\omega_1\omega_2^3\omega_3 - 78c_s^2\omega_1^3\omega_2^2\omega_3 - 16\omega_1^2\omega_2^2\omega_3 + 96v_2^4\omega_1^2\omega_2\omega_3 + 160c_s^2v_2^2\omega_1^3\omega_3 - 80c_s^2\omega_1\omega_2^2\omega_3 - 27v_2^4\omega_1^3\omega_2^3\omega_3 - 1088c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 - 156c_s^4\omega_1^3\omega_2\omega_3 + 164c_s^4\omega_1^2\omega_2^3\omega_3 + 18c_s^2\omega_1^3\omega_2^3\omega_3 - 8c_s^2\omega_1\omega_2^3 + 72c_s^4\omega_1^3\omega_3 + 16\omega_1^2\omega_2^3\omega_3 + 144v_2^4\omega_2^3\omega_3 + 168v_2^4\omega_1\omega_2^2\omega_3 - 80c_s^2\omega_1^2\omega_2\omega_3 - 10\omega_1^3\omega_2\omega_3 - 196v_2^2\omega_1^2\omega_2^3\omega_3 + 94v_2^2\omega_1^3\omega_2\omega_3$

$C_{32} = -8c_s^2\omega_1^3\omega_2 + 336c_s^2v_2^2\omega_1\omega_2^2\omega_3 + 8\omega_1^3\omega_2^2\omega_3 + 24c_s^2\omega_1^2\omega_2^2\omega_3 - 68c_s^4\omega_1\omega_3^2\omega_3 - 154v_2^2\omega_1^3\omega_2^2\omega_3 + 552c_s^2v_2^2\omega_2^3\omega_3 - 54c_s^2v_2^2\omega_1^3\omega_2^3\omega_3 - 888v_2^4\omega_1^2\omega_2^2\omega_3 + 264c_s^2v_2^2\omega_1^2\omega_2\omega_3 + 16c_s^2\omega_1^2\omega_2^2 - 28\omega_1\omega_2^3\omega_3 + 14c_s^4\omega_1^3\omega_2^2\omega_3 + 96v_2^4\omega_1^3\omega_3 + 40c_s^4\omega_2^3\omega_3 + 552v_2^2\omega_1\omega_2^3\omega_3 + 42v_2^2\omega_1^3\omega_2^3\omega_3 + 8c_s^4\omega_1^3\omega_2 + 8c_s^4\omega_1\omega_2^2\omega_3 - 168v_2^2\omega_1^2\omega_2\omega_3 - 48c_s^2v_2^2\omega_1^2\omega_2^2 - 3\omega_1^3\omega_2^3\omega_3 - 44c_s^2\omega_1^2\omega_2^3\omega_3 - 1008c_s^2v_2^2\omega_1\omega_2^3\omega_3 + 8\omega_1^2\omega_2\omega_3 + 42c_s^2\omega_1^3\omega_2\omega_3 + 8c_s^4\omega_1^2\omega_2\omega_3 - 240v_2^2\omega_1\omega_2^2\omega_3 + 24c_s^2v_2^2\omega_1^3\omega_2 - 3c_s^4\omega_1^3\omega_2^3\omega_3 - 16c_s^4\omega_1^2\omega_2^2 + 8\omega_1\omega_2^2\omega_3 - 60v_2^2\omega_1^3\omega_3 - 312v_2^4\omega_1^3\omega_2\omega_3 + 252c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 + 4\omega_1^3\omega_3 + 620v_2^4\omega_1^2\omega_2^3\omega_3 - 56c_s^2\omega_2^3\omega_3 + 24c_s^2v_2^2\omega_1\omega_2^2 - 8c_s^4\omega_1^2\omega_2^2\omega_3 + 310v_2^4\omega_1^3\omega_2^2\omega_3 + 504c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 + 96c_s^2\omega_1\omega_2^3\omega_3 - 360c_s^2v_2^2\omega_1^3\omega_2\omega_3 - 20c_s^2\omega_1^3\omega_3 + 8c_s^4\omega_1\omega_3^2 + 16\omega_2^3\omega_3 - 288v_2^2\omega_2^3\omega_3 + 408v_2^2\omega_1^2\omega_2^2\omega_3 - 1068v_2^4\omega_1\omega_2^3\omega_3 - 22c_s^2\omega_1^3\omega_2^2\omega_3 - 16\omega_1^2\omega_2^2\omega_3 + 336v_2^4\omega_1^2\omega_2\omega_3 + 144c_s^2v_2^2\omega_1^3\omega_3 - 16c_s^2\omega_1\omega_2^2\omega_3 - 87v_2^4\omega_1^3\omega_2^3\omega_3 - 576c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 - 32c_s^4\omega_1^3\omega_2\omega_3 + 28c_s^4\omega_1^2\omega_2^3\omega_3 + 6c_s^2\omega_1^3\omega_2^3\omega_3 - 8c_s^2\omega_1\omega_2^3 + 16c_s^4\omega_1^3\omega_3 + 16\omega_1^2\omega_2^3\omega_3 + 528v_2^4\omega_2^3\omega_3 + 552v_2^2\omega_1\omega_2^2\omega_3 - 16c_s^2\omega_1^2\omega_2\omega_3 - 10\omega_1^3\omega_2\omega_3 - 308v_2^2\omega_1^2\omega_2^3\omega_3 + 174v_2^2\omega_1^3\omega_2\omega_3$

$C_{33} = 12v_1^2\omega_4\omega_3 - 3\omega_1v_3^2\omega_3^2 + 2\omega_4^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_1\omega_3^2 + 3v_1^2\omega_1\omega_3^2 + 6\omega_4^2v_3^2\omega_3 - 6\omega_4^2v_3^2 - 6\omega_4^2\omega_1 - 6v_1^2\omega_3^2 - 18\omega_4c_s^2\omega_3^2 + 36\omega_4c_s^2\omega_3 - 6v_1^2\omega_4^2 - 18\omega_4c_s^2\omega_1\omega_3 + 2\omega_4\omega_1v_3^2\omega_3^2 + 3\omega_4^2\omega_1v_3^2 - 36\omega_4^2c_s^2 + 12\omega_4^2 - 6\omega_4^2\omega_3 + 18\omega_4^2c_s^2\omega_3 - 2\omega_4^2\omega_1v_3^2\omega_3 - 6\omega_4v_3^2\omega_3^2 - 12\omega_4\omega_3 - 2\omega_4\omega_1\omega_3^2 + 3v_1^2\omega_4^2\omega_1 + 6v_3^2\omega_3^2 - 6\omega_4^2c_s^2\omega_1\omega_3 + 18\omega_4^2c_s^2\omega_1 - 6v_1^2\omega_4\omega_1\omega_3 + 6\omega_4\omega_3^2 + 6\omega_4\omega_1\omega_3$

$C_{34} = 4v_1^2\omega_4\omega_2\omega_3 + 18\omega_4\omega_1v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 12\omega_4c_s^2\omega_1\omega_3 - 9v_1^2\omega_4\omega_1\omega_2 + 6\omega_4c_s^2\omega_2\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4c_s^2\omega_1\omega_2\omega_3 - 9v_1^2\omega_1\omega_2\omega_3 + 6v_1^2\omega_4\omega_1\omega_2\omega_3 + 2v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 18\omega_4v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{35} = -16\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 128\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 104\omega_4^2c_s^2\omega_1^3\omega_3^2 - 56\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3 - 96v_1^2\omega_4^2\omega_3^2\omega_3^2 - 168\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 + 16\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 27\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 - 60v_1^2\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 - 162c_s^4\omega_1^3\omega_2^2\omega_3^2 - 30\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 + 864v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 108c_s^2\omega_1^2\omega_3^2\omega_3^2 - 56\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 - 324\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 + 80\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 96v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 + 192\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 - 24v_1^2\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 - 36v_1^4\omega_4^2\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2\omega_3^2\omega_3^2 + 192\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 8\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3 - 8\omega_4^2\omega_1^3\omega_2\omega_3^2 - 96v_1^2\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 + 144\omega_4^2c_s^4\omega_1^3\omega_3^2 - 432v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 27\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 + 48v_1^4\omega_4^2\omega_1^3\omega_3^2 - 8\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2 + 64\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 32\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 - 60v_1^2\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 - 24\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 432v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 - 84\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2 + 72v_1^4\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 324\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 + 32\omega_4^2c_s^2v_3^2\omega_2^2\omega_3^2 - 10\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 8\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3^2 - 192v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 8\omega_4^2\omega_1^3v_3^2\omega_3^2 - 108\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 8\omega_4^2\omega_1\omega_2^3\omega_3^2 + 24v_1^4\omega_4^2\omega_2^3\omega_3^2 - 54\omega_4^2c_s^2\omega_1^3\omega_3^2 + 8\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 - 432v_1^2\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2 - 216\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 + 108c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 72v_1^4\omega_4^2\omega_1^2\omega_2\omega_3^2 + 10\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 144\omega_4^2c_s^4\omega_3^2\omega_3^2 + 54c_s^2\omega_1^3\omega_2^3\omega_3^2 + 108\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3 - 252\omega_4^2c_s^4\omega_1^2\omega_3^2 + 96v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 112\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 + 81\omega_4c_s^4\omega_1^3\omega_2^2\omega_3^2 + 108\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 - 168\omega_4^2c_s^4\omega_1\omega_2^3\omega_3 - 72\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2 + 24\omega_4^2c_s^2\omega_1^3\omega_2^2 + 324c_s^4\omega_1^2\omega_2^3\omega_3^2 + 96v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 - 8\omega_4^2v_3^2\omega_3^2\omega_3^2 - 64\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 + 32\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 432v_1^2\omega_4^2c_s^2\omega_3^2\omega_3^2 + 8\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 + 162\omega_4^2c_s^4\omega_1^3\omega_2^2 - 176\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 64\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 + 54\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2 - 432v_1^2\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 10\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 96v_1^2\omega_4^2\omega_1^3\omega_3^2 - 104\omega_4^2c_s^2\omega_2^3\omega_3^2 + 120v_1^2\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 24\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1\omega_2^2\omega_3^2 + 72v_1^2\omega_4^2v_3^2\omega_2^3\omega_3^2 + 84\omega_4^2c_s^2\omega_1^2\omega_3^2 - 81\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3 - 54c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 + 8\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 + 8\omega_4^2\omega_1^3\omega_3^2 - 10\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 96v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 + 8\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 48v_1^2\omega_4^2\omega_1^3v_3^2\omega_3^2 - 72\omega_4^2c_s^4\omega_1^3\omega_2^2 + 27\omega_4c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2\omega_3^2 + 30\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 - 27\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2\omega_3 - 432v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 - 24\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2 - 36v_1^4\omega_4^2\omega_1\omega_3^2\omega_3^2$

$C_{36} = -6c_s^2\omega_1^3\omega_2 - 3\omega_1v_3^2\omega_3^2\omega_3 + 48c_s^2\omega_1^2\omega_2^2\omega_3 + 4v_3^2\omega_3^2\omega_3 - 13v_1^2\omega_1\omega_3^2\omega_3 - 4\omega_1^2v_3^2\omega_2\omega_3 + 4\omega_1^3v_3^2\omega_3 + 12c_s^2\omega_1^2\omega_2^2 + 10\omega_1\omega_2^3\omega_3 + 2\omega_1\omega_2^3 + 10v_1^2\omega_3^2\omega_3 - 4v_1^2\omega_1\omega_2^2\omega_3 + 4\omega_1^2v_3^2\omega_2^2 - 3\omega_1^3v_3^2\omega_2\omega_3 + 14\omega_1^2\omega_2\omega_3 - 4\omega_1v_3^2\omega_2^2\omega_3 - 24c_s^2\omega_1^3\omega_2\omega_3 - 22v_1^2\omega_1^2\omega_2\omega_3 + 8\omega_1\omega_2^2\omega_3 - 12\omega_1^3\omega_3 + 26c_s^2\omega_2^3\omega_3 + 26v_1^2\omega_1^2\omega_2^2\omega_3 - 2\omega_1^3v_3^2\omega_2 - 24c_s^2\omega_1\omega_2^3\omega_3 + 28c_s^2\omega_1^3\omega_3 - 10\omega_2^3\omega_3 - 2\omega_1v_3^2\omega_2^2 - 20\omega_1^2\omega_2^2\omega_3 - 24c_s^2\omega_1\omega_2^2\omega_3 + 6\omega_1^2v_3^2\omega_2^2\omega_3 - 13v_1^2\omega_1^3\omega_2\omega_3 + 2\omega_1^3\omega_2 - 6c_s^2\omega_1\omega_2^2 + 16v_1^2\omega_1^3\omega_3 - 30c_s^2\omega_1^2\omega_2\omega_3 + 10\omega_1^3\omega_2\omega_3 - 4\omega_1^2\omega_2^2$

$C_{37} = 2\omega_4\omega_1v_3^2\omega_3 + 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 6\omega_4c_s^2\omega_1\omega_3 - 6\omega_4c_s^2\omega_2\omega_3 - 9\omega_1\omega_2\omega_3 - 9\omega_4\omega_1v_3^2\omega_2 + 9\omega_1v_3^2\omega_2\omega_3 - 2\omega_4v_3^2\omega_2\omega_3 - 2\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{38} = -48v_1^2\omega_4^2\omega_1\omega_5\omega_3^2\omega_3^2 + 24\omega_4^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2 + 48v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 48\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2\omega_3 + 24\omega_4^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2 + 24v_1^4\omega_4^2\omega_1^2\omega_5\omega_2\omega_3^2 + 240\omega_4^2c_s^2v_3^2\omega_5\omega_2^3\omega_3^2 + 162v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3 - 162\omega_4c_s^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3^2 + 288\omega_4c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 + 108v_1^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 160\omega_4^2c_s^4\omega_1\omega_5\omega_2^3\omega_3 - 24v_1^4\omega_4^2\omega_1^3\omega_5\omega_2\omega_3 + 16\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 180v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 - 288\omega_4c_s^4\omega_1\omega_5\omega_2^3\omega_3^2 - 160\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3 + 288\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 + 36v_1^4\omega_4\omega_1\omega_5\omega_2^3\omega_3^2 - 6\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_3^2\omega_3^2 - 108v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 - 162v_1^2c_s^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3^2 - 56\omega_4^2c_s^4\omega_1\omega_5\omega_2^2\omega_3^2 - 120\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_2^3\omega_3^2 - 72v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3 + 108v_1^4\omega_4^2\omega_1\omega_5\omega_3^3\omega_3^2 - 36v_1^2\omega_4\omega_1\omega_5\omega_2^3\omega_3^2 + 64\omega_4^2c_s^2\omega_1\omega_5\omega_2^2\omega_3^2 - 28\omega_4^2c_s^4\omega_1^3\omega_5\omega_2\omega_3^2 + 264\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3 - 216v_1^2\omega_4c_s^2\omega_1^2\omega_5\omega_3^2\omega_3^2 - 48\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2 + 24v_1^2\omega_4^2\omega_1^3\omega_5\omega_2\omega_3 - 108v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3\omega_3 + 36v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 132\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2 + 16\omega_4^2c_s^4\omega_1^3\omega_5\omega_2\omega_3 - 24\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^3 + 108v_1^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3\omega_3 + 132v_1^2\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2 + 324v_1^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 64\omega_4^2c_s^2\omega_1^2\omega_5\omega_2\omega_3^2 - 16\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3 + 24\omega_4^2\omega_1v_3^2\omega_5\omega_2^3\omega_3^2 - 40\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2 + 108v_1^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3\omega_3^2 - 36v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 72v_1^2\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2 - 56\omega_4^2c_s^4\omega_1^2\omega_5\omega_2\omega_3^2 - 60v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_3^3\omega_3^2 + 12v_1^4\omega_4^2\omega_1\omega_5\omega_2^3\omega_3 + 336\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_3^2\omega_3 + 216v_1^2\omega_4^2v_3^2\omega_5\omega_2^3\omega_3^2 - 108v_1^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 72v_1^4\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2 + 27\omega_4c_s^2v_3^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 60v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 - 468\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3 - 54v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 12v_1^2\omega_4^2\omega_1\omega_5\omega_2^3\omega_3 - 72v_1^2\omega_4^2\omega_1^2v_3^2\omega_5\omega_2\omega_3^2 + 24v_1^4\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2 + 108v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3 - 168\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2 - 12\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2 + 54v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 88\omega_4^2c_s^2\omega_5\omega_2^3\omega_3^2 - 108v_1^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 + 8\omega_4^2c_s^4\omega_1\omega_5\omega_2^3\omega_3^2 + 18v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 288\omega_4c_s^4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 216\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3 + 264v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2 - 2\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 - 144v_1^4\omega_4\omega_1^2\omega_5\omega_3^2\omega_3^2 + 108v_1^4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 54v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3\omega_3 - 6\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3\omega_3^2 + 8\omega_4^2\omega_1^3\omega_5\omega_3^2 - 348v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3^2 - 8\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2 + 144v_1^2\omega_4^2\omega_1^3v_3^2\omega_5\omega_3^2 + 2\omega_4^2v_3^4\omega_1^3\omega_5\omega_2^2\omega_3^2 - 108v_1^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 360v_1^2\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2 - 288\omega_4c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 216\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3\omega_3 +$

$18v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2 - 36v_1^2\omega_4\omega_1^3\omega_5\omega_2^2\omega_3^2 + 6\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2 - 24v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2\omega_3^2 + 12v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3 - 72\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3 -$
$108v_1^2\omega_4c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 - 96\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2\omega_3^2 - 2\omega_4^2v_2^4\omega_1^2\omega_5\omega_2^3\omega_3^2 - 288v_1^2\omega_4^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2 + 8\omega_4^2\omega_5\omega_3^3\omega_3^2 - 54v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^3\omega_3 -$
$72\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 144v_1^2\omega_4\omega_1^2\omega_5\omega_2^2\omega_3^2 - 180v_1^2\omega_4^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2 + 9\omega_4^2v_2^2\omega_1^3\omega_5\omega_3^2\omega_3 - 72\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3^2 - 18v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 9\omega_4v_4^2\omega_1^3\omega_5\omega_3^2\omega_3^2 -$
$216v_1^2\omega_4^2c_s^2\omega_5\omega_2^3\omega_3^2 - 12v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3 + 36v_1^4\omega_4\omega_1^3\omega_5\omega_2^2\omega_3^2 + 2\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 24\omega_4^2v_3^2\omega_5\omega_2^3\omega_3^2 + 162\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3 + 72\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 -$
$18v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 180v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3 - 9\omega_4^2v_4^2\omega_1^3\omega_5\omega_2^3\omega_3 - 9\omega_4v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2 - 216v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 + 56\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2\omega_3^2 - 84v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3^2 -$
$36v_1^4\omega_4\omega_1^3\omega_5\omega_2^2\omega_3 - 54v_1^2\omega_4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 4\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 36v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3\omega_3 + 300v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 + 24v_1^2\omega_4^2\omega_5\omega_2^3\omega_3^2 + 112\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2\omega_3 -$
$72v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 6\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 27\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^3\omega_3 + 4\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3^2 - 8\omega_4^2\omega_1\omega_5\omega_2^3\omega_3^2 + 648\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2 - 288\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 +$
$72v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 112\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3 - 36v_1^2\omega_4\omega_1^2\omega_5\omega_2^3\omega_3 - 96v_1^4\omega_4^2\omega_5\omega_2^3\omega_3^2 + 24\omega_4^2\omega_1^2v_3^2\omega_5\omega_2\omega_3^2 - 36v_1^4\omega_4\omega_1^2\omega_5\omega_2^2\omega_3^2 + 32\omega_4^2c_s^4\omega_1^3\omega_5\omega_3^2 -$
$72v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3 - 96v_1^2\omega_4^2\omega_1^3\omega_5\omega_3^2 - 24v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2\omega_3^2 - 28\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3\omega_3^2 - 648\omega_4c_s^2\omega_1v_3^2\omega_5\omega_2^3\omega_3^2 - 54v_1^4\omega_1^3\omega_5\omega_3^3\omega_3^2 - 36v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3\omega_3 +$
$54v_1^4\omega_4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 72\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 - 180\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3 + 36v_1^2\omega_4\omega_1^3\omega_5\omega_2^2\omega_3 - 36v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 72\omega_4c_s^4\omega_1^3\omega_5\omega_3^2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_5\omega_2\omega_3^2 +$
$152\omega_4^2c_s^4\omega_5\omega_2^3\omega_3^2 + 72v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3 + 36v_1^2\omega_4\omega_1^2\omega_5\omega_2^2\omega_3^2 + 4\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 48v_1^4\omega_4^2\omega_1^3\omega_5\omega_3^2 + 36v_1^4\omega_4\omega_1^2\omega_5\omega_2^3\omega_3 + 6\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 +$
$24\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_3^2 + 72\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3\omega_3 + 72\omega_4c_s^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 54v_1^2\omega_1^3\omega_5\omega_2^3\omega_3^2 - 72v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3 - 180v_1^2\omega_4^2\omega_1v_3^2\omega_5\omega_2^3\omega_3^2$

$C_{39} =$
$-18c_s^2\omega_1^3\omega_2 + 4v_2^2\omega_1^3 - 12\omega_1\omega_2^2 - 6v_1^2\omega_1^2\omega_2 + 12v_2^2\omega_1\omega_2^2 + 2v_3^2\omega_2^3 + 36c_s^2\omega_1^2\omega_2^2 + 4\omega_1^3v_3^2 + 6\omega_1\omega_2^3 - 6\omega_1^2v_3^2\omega_2 - 3v_1^2\omega_1^3\omega_2 + 6\omega_1^2v_3^2\omega_2^2 - 72c_s^2\omega_1^2\omega_2 + 4v_1^2\omega_1^3 +$
$6v_1^2\omega_1^2\omega_2^2 - 12\omega_1^3 + 36c_s^2\omega_1^3 + 24\omega_1^2\omega_2 - 12v_2^2\omega_1^2\omega_2 - 3\omega_1^3v_3^2\omega_2 - 3v_1^2\omega_1\omega_2^2 - 3\omega_1v_3^2\omega_2^3 + 2v_1^2\omega_2^3 + 36c_s^2\omega_1\omega_2^2 + 6\omega_1^3\omega_2 - 18c_s^2\omega_1\omega_2^2 - 12\omega_1^2\omega_2^2 - 4v_2^2\omega_2^3$

$C_{40} = -36\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 36\omega_4v_2^2\omega_1^2\omega_3^2\omega_3^2 + 48\omega_4^2v_2^2\omega_3^2\omega_3^2 - 72\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 63\omega_4\omega_1^3v_3^2\omega_3^2\omega_3^2 + 336\omega_4^2c_s^2\omega_1^3\omega_3^2 - 72\omega_4^2v_2^2\omega_1^2\omega_3^2 +$
$72v_1^2\omega_4^2\omega_3^2\omega_3^2 + 54\omega_4^2\omega_1^3v_3^2\omega_3^2 + 324\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 + 108\omega_4\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 189\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2 - 36\omega_4\omega_1^2v_3^2\omega_3^2\omega_3 + 12\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3 -$
$36\omega_4\omega_1\omega_3^3\omega_3^2 + 72\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3 - 36\omega_4^2\omega_1^3v_3^2\omega_2^2 + 144\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3 - 144\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 - 108v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 - 36\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 + 36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3 +$
$36\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2 + 144\omega_4^2\omega_1^2\omega_3^3 + 54v_2^2\omega_1^3\omega_3^2\omega_3^2 + 48\omega_4^2\omega_1^3\omega_2\omega_3 - 36\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 + 72\omega_4\omega_1^3\omega_2^2\omega_3^2 + 24\omega_4^2\omega_3^2\omega_3^2 + 216\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 -$
$108\omega_4^2\omega_1^2\omega_3^2\omega_3 - 36\omega_4^2v_2^2\omega_1^2\omega_3^2\omega_3 + 72\omega_4^2\omega_1^3\omega_2^2 + 144\omega_4^2\omega_1^3\omega_2\omega_3^2 - 63\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3 - 24\omega_4^2v_2^2\omega_1^3\omega_2\omega_3 - 72\omega_4\omega_1^3\omega_2^2\omega_3 - 216\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 +$
$20\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 189\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 + 54\omega_4^2v_2^2\omega_1^3\omega_2^3 + 36\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2 - 20\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3^2 + 180\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 - 63\omega_4\omega_1^3\omega_2^3\omega_3^2 +$
$48\omega_4^2\omega_1^2\omega_2^2\omega_3 - 324\omega_4c_s^2\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2\omega_1^3\omega_2^3 + 72\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 180\omega_4\omega_1^2v_3^2\omega_2^3\omega_3^2 + 20\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2 + 108\omega_4c_s^2\omega_1\omega_2^3\omega_3^2 +$
$180\omega_4v_2^2\omega_1^2\omega_2^3\omega_3 - 60\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3 - 36\omega_4^2v_2^2\omega_1^3\omega_2^2 + 60\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 216v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 54\omega_1^3v_3^2\omega_3^2\omega_3^2 + 48\omega_4^2\omega_1^3v_3^2\omega_3^2 - 36\omega_4^2\omega_1\omega_3^2\omega_3^2 -$
$108v_2^2\omega_1^2\omega_2^3\omega_3^2 + 324\omega_4^2c_s^2\omega_1^3\omega_2^2 - 72\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 + 63\omega_4^2\omega_1^3\omega_2^2\omega_3 - 72\omega_4\omega_1^2\omega_2^2\omega_3^2 - 48\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 + 12\omega_4^2v_2^2\omega_1\omega_2^3\omega_3 - 60\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 -$
$216v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 - 360\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 24\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 + 36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3 - 432\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 - 20\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 144\omega_4\omega_1^2\omega_2^3\omega_3 -$
$48\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 - 216\omega_4^2c_s^2\omega_1^3\omega_2^2 + 36\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3 - 96\omega_4^2v_3^2\omega_2^2\omega_3^2 - 24\omega_4^2\omega_1v_3^2\omega_2^3\omega_3 - 144\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 72\omega_4^2\omega_1^2v_3^2\omega_2^3 + 108\omega_4^2\omega_1v_3^2\omega_2^3\omega_3^2 -$
$108\omega_4v_2^2\omega_1^3\omega_2^3\omega_3 + 180\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 36\omega_4v_2^2\omega_1\omega_2^3\omega_3^2 + 432\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 - 108\omega_4^2\omega_1^3\omega_2^2\omega_3 + 144v_1^2\omega_4^2\omega_1^3\omega_2^3 - 120\omega_4^2c_s^2\omega_2^3\omega_3^2 + 144\omega_4\omega_1^2\omega_2^3\omega_3^2 +$
$48\omega_4^2v_2^2\omega_1^3\omega_3^2 + 24\omega_4^2\omega_1\omega_2^2\omega_3^2 - 432\omega_4^2c_s^2\omega_1^2\omega_3^2 + 324\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 + 24\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 - 144\omega_4^2\omega_1^3\omega_3^2 - 108v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 - 144\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 +$
$108v_1^2v_3^2\omega_2^3\omega_3^2 - 36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3^2 + 12\omega_4^2\omega_1\omega_2^3\omega_3 + 72\omega_4\omega_1v_3^2\omega_2^3\omega_3^2 + 96\omega_4^2\omega_1^2\omega_2\omega_3^2 + 216\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 - 24\omega_4^2\omega_1^3v_3^2\omega_2\omega_3 - 36\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2$

$C_{41} = -4v_1^2\omega_4\omega_1^2\omega_2\omega_3^2 + v_1^2\omega_4\omega_1\omega_3^2\omega_3 - 6\omega_1^3\omega_2^2\omega_3 + 4\omega_4\omega_1^3v_3^2\omega_3^2 - 3\omega_4\omega_1^2v_3^2\omega_3^2\omega_3 + 6\omega_4\omega_1\omega_3^2\omega_3^2 + 6\omega_4c_s^2\omega_1\omega_3^2\omega_3 + 4v_1^2\omega_4\omega_1^3\omega_3^2 -$
$36\omega_4c_s^2\omega_1^2\omega_2\omega_3^2 + 3\omega_4\omega_1^2v_3^2\omega_3^2 + 3v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 + 18c_s^2\omega_1^2\omega_2^2\omega_3^2 - 4v_1^2\omega_4\omega_1\omega_2^2\omega_3^2 + 4\omega_4v_3^2\omega_2^2\omega_3^2 - 12\omega_4\omega_1^3\omega_3^2 + 3\omega_4\omega_1^3v_3^2\omega_2^2\omega_3 +$
$6\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2 - 18\omega_4c_s^2\omega_1^3\omega_2^2 - 12\omega_4c_s^2\omega_1\omega_2^2\omega_3^2 + 18\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 + 3v_1^2\omega_1^3\omega_2^2\omega_3 - 4\omega_4\omega_1\omega_2^2\omega_3^2 + 12\omega_4v_2^2\omega_1^3\omega_3^2 + \omega_4\omega_1^2v_3^2\omega_2^2\omega_3 +$
$18\omega_4c_s^2\omega_1^2\omega_3^2 - 6\omega_4\omega_1^3\omega_2^2\omega_3 - 3v_1^2\omega_1^3\omega_2^2\omega_3^2 + 20\omega_4c_s^2\omega_3^3\omega_3^2 - 18c_s^2\omega_1^2\omega_3^3\omega_3 + 6\omega_1\omega_3^2\omega_3^2 - 2\omega_4\omega_1\omega_3^2\omega_3 + 20\omega_4\omega_1^2\omega_2\omega_3^2 - 3v_1^2\omega_1\omega_3^2\omega_3^2 -$
$18\omega_4c_s^2\omega_1\omega_3^2\omega_3^2 - 3v_1^2\omega_4\omega_1\omega_3^2\omega_3^2 - 3\omega_1v_3^2\omega_3^2\omega_3^2 + 6\omega_1^3\omega_2^2\omega_3^2 + 18c_s^2\omega_1^2\omega_2^2\omega_3^2 + \omega_4\omega_1v_3^2\omega_3^2\omega_3 + 6\omega_4\omega_1^3\omega_2^2 + 6\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 - 12\omega_4\omega_1^2\omega_2^2\omega_3^2 +$
$28\omega_4c_s^2\omega_1^3\omega_3^2 - 6\omega_1^2\omega_2^3\omega_3^2 + v_1^2\omega_4\omega_1^2\omega_2^2\omega_3 + 36\omega_4v_2^2\omega_1\omega_2^2\omega_3^2 - 12\omega_4v_2^2\omega_3^2\omega_3^2 - 3\omega_1^2v_3^2\omega_3^2\omega_3 + 3v_1^2\omega_1^2\omega_3^2\omega_3^2 + 6\omega_4\omega_1^2\omega_3^2\omega_3 - 18\omega_4c_s^2\omega_1^3\omega_2\omega_3^2 +$
$3\omega_1^3v_3^2\omega_2^2\omega_3 - 4\omega_4\omega_1v_3^2\omega_2^2\omega_3^2 + 4\omega_4\omega_1^3\omega_2\omega_3 + 3\omega_1^2v_3^2\omega_2^2\omega_3^2 - 3v_1^2\omega_4\omega_1^3\omega_2\omega_3^2 + 18c_s^2\omega_1^3\omega_2^2\omega_3 - 3\omega_4\omega_1^3v_3^2\omega_2\omega_3^2 - 3\omega_4\omega_1^3v_3^2\omega_2^2 - 3v_1^2\omega_4\omega_1^3\omega_2^2 -$
$36\omega_4v_2^2\omega_1^2\omega_2\omega_3^2 + 4v_1^2\omega_4\omega_3^2\omega_3^2 - 2v_1^2\omega_4\omega_1^3\omega_2\omega_3 - 18c_s^2\omega_1^3\omega_2^2\omega_3^2 - 2\omega_4\omega_1^3v_3^2\omega_2\omega_3 + 3v_1^2\omega_4\omega_1^2\omega_3^2 - 6\omega_1^2\omega_2^2\omega_3^2 - 3v_1^2\omega_4\omega_1^2\omega_3^2\omega_3 -$
$18\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 - 3v_1^2\omega_1^2\omega_2^3\omega_3 - 4\omega_4\omega_1^2v_3^2\omega_2\omega_3^2 - 12\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 3\omega_1^3v_3^2\omega_2^2\omega_3^2 + 6\omega_4\omega_1^3\omega_2\omega_3^2 + 6\omega_1^2\omega_2^3\omega_3 + 6v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2 - 18c_s^2\omega_1\omega_2^3\omega_3^2 +$
$3\omega_1^2v_3^2\omega_3^2\omega_3^2 - 3\omega_4\omega_1v_3^2\omega_3^2\omega_3^2 - 4\omega_4\omega_3^2\omega_3^2 + 36\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 + 3v_1^2\omega_1^2\omega_2^2\omega_3^2 - 6\omega_4\omega_1^2\omega_3^2 - 2\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{42} = 216\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 36\omega_4v_2^2\omega_1^2\omega_3^2\omega_3^2 + 48\omega_4^2v_2^2\omega_3^2\omega_3^2 - 72\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 72v_1^2\omega_4^2\omega_1^2\omega_3^2 + 336\omega_4^2c_s^2\omega_1^3\omega_3^2 + 63v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2 -$
$60v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3 - 72\omega_4^2v_2^2\omega_1^2\omega_3^2 - 96v_1^2\omega_4^2\omega_3^2\omega_3^2 + 324\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 + 108\omega_4\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 189\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2 - 54v_1^2\omega_1^3\omega_3^2\omega_3^2 +$
$12\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3 - 36\omega_4\omega_1\omega_3^2\omega_3^2 + 36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 - 20v_1^2\omega_4^2\omega_1^2\omega_3^2\omega_3^2 - 144\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 - 72v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 - 36\omega_4^2c_s^2\omega_1\omega_3^2\omega_3 + 144\omega_4^2\omega_1^2\omega_3^2 +$
$54v_2^2\omega_1^3\omega_3^2\omega_3^2 + 48\omega_4^2\omega_1^3\omega_2\omega_3 - 36\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 + 72\omega_4\omega_1^3\omega_2^2\omega_3^2 + 24\omega_4^2\omega_3^3\omega_3^2 + 216\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 - 108\omega_4^2\omega_1^2\omega_2^3\omega_3 - 36\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3 +$
$72\omega_4^2\omega_1^3\omega_2^2 + 144\omega_4^2\omega_1^3\omega_2\omega_3^2 - 24\omega_4^2v_2^2\omega_1^3\omega_2\omega_3 - 72\omega_4\omega_1^3\omega_2^2\omega_3 - 216\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 + 20\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2 - 189\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 +$
$54\omega_4^2v_2^2\omega_1^3\omega_2^3 + 144v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3 + 36\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2 + 54v_1^2\omega_4^2\omega_1^3\omega_2^3 - 24v_1^2\omega_4^2\omega_1^3\omega_2\omega_3 + 180\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 - 63\omega_4\omega_1^3\omega_2^3\omega_3^2 + 48\omega_4^2\omega_1^2\omega_2^2\omega_3 -$
$324\omega_4c_s^2\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2\omega_1^3\omega_2^3 + 72\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 108\omega_4c_s^2\omega_1\omega_2^3\omega_3^2 + 180\omega_4v_2^2\omega_1^2\omega_2^3\omega_3 + 72v_1^2\omega_4\omega_1\omega_2^3\omega_3^2 - 36v_1^2\omega_4^2\omega_3^3\omega_3^2 - 36\omega_4^2v_2^2\omega_1^3\omega_2^2 +$
$60\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 36v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 144\omega_4^2\omega_1^3v_3^2\omega_3^2 - 36\omega_4^2\omega_1\omega_3^2\omega_3^2 - 108v_2^2\omega_1^2\omega_3^2\omega_3^2 + 324\omega_4^2c_s^2\omega_1^3\omega_2^2 - 108\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 + 63\omega_4^2\omega_1^3\omega_3^2\omega_3 -$
$72\omega_4\omega_1^2\omega_2^2\omega_3^2 - 48\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 + 12\omega_4^2v_2^2\omega_1\omega_3^2\omega_3 - 60\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 + 24v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 - 24v_1^2\omega_4^2\omega_1\omega_3^2\omega_3 - 360\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 +$
$36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3 + 108v_1^2\omega_1^2\omega_3^2\omega_3^2 - 432\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 - 20\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 144\omega_4\omega_1^2\omega_3^2\omega_3 - 48\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 - 216\omega_4^2c_s^2\omega_1^3\omega_2^2 + 36\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3 +$
$24v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 + 72\omega_4^2v_3^2\omega_3^2\omega_3^2 - 144\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 + 72v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3 - 180v_1^2\omega_4\omega_1^2\omega_3^2\omega_3^2 - 108\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 - 108\omega_4\omega_1^2v_3^2\omega_1^3\omega_3^2\omega_3 +$
$20v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 + 180\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 36\omega_4v_2^2\omega_1\omega_3^2\omega_3^2 - 36v_1^2\omega_4\omega_1^2\omega_3^2\omega_3 + 432\omega_4c_s^2\omega_1^2\omega_3^2\omega_3 - 108\omega_4^2\omega_1^3\omega_2^2\omega_3 + 48v_1^2\omega_4^2\omega_1^3\omega_3^2 - 120\omega_4^2c_s^2\omega_3^2\omega_3^2 +$
$144\omega_4\omega_1^2\omega_2^3\omega_3^2 + 48\omega_4^2v_2^2\omega_1^3\omega_3^2 + 24\omega_4^2\omega_1\omega_2^2\omega_3^2 - 432\omega_4^2c_s^2\omega_1^2\omega_3^2 + 24\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 - 144\omega_4^2\omega_1^3\omega_3^2 - 108v_1^2\omega_4^2\omega_1\omega_3^2\omega_3^2 - 144\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 +$
$108v_1^2v_3^2\omega_2^3\omega_3^2 - 36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3^2 + 12\omega_4^2\omega_1\omega_2^3\omega_3 + 72\omega_4\omega_1v_3^2\omega_2^3\omega_3^2 + 96\omega_4^2\omega_1^2\omega_2\omega_3^2 + 216\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 - 24\omega_4^2\omega_1^3v_3^2\omega_2\omega_3 - 36\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2$

$C_{43} = -48v_2^2\omega_1^3\omega_3^2 + 8\omega_1\omega_2^2\omega_3^2 - 36v_2^4\omega_1^3\omega_2\omega_3^2 - 12c_s^2\omega_1^2\omega_3^2 + 4\omega_1^3\omega_3^2 + 72c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 24v_2^2\omega_1v_3^2\omega_2^2\omega_3^2 + 4c_s^2\omega_1^2\omega_2^2\omega_3 + 20c_s^2\omega_2^3\omega_3^2 + 24c_s^4\omega_1\omega_2^3\omega_3 +$
$48v_2^2\omega_1\omega_2^2\omega_3^2 - 36c_s^4\omega_1^2\omega_2\omega_3^2 + 22c_s^2\omega_1v_3^2\omega_3^3\omega_3^2 - 48v_2^2\omega_1^3v_3^2\omega_2\omega_3^2 + 5c_s^2\omega_1^2\omega_3^2\omega_3^2 - 4\omega_1^2\omega_2\omega_3^2 + 108c_s^2v_2^2\omega_1\omega_3^2\omega_3^2 - 4c_s^2\omega_1^3v_3^2\omega_2\omega_3 + 56c_s^2\omega_1^3\omega_2\omega_3^2 -$
$8\omega_1v_3^2\omega_2^2\omega_3^2 + 54c_s^4\omega_1^3\omega_2^2\omega_3 - 4c_s^2\omega_1^2v_3^2\omega_2\omega_3^2 - 36c_s^4\omega_1^3\omega_2^2 - 24v_2^2\omega_1^2\omega_2\omega_3^2 + 4\omega_1^3v_3^2\omega_2\omega_3^2 + 36c_s^4\omega_1^2\omega_3^2 + 6c_s^4\omega_1^3\omega_2^2\omega_3^2 + 24v_2^4\omega_1^3\omega_3^2 - 12c_s^2\omega_1^3v_3^2\omega_3^2 -$
$60v_2^2\omega_1\omega_3^2\omega_3^2 + 24v_2^2\omega_1^3v_3^2\omega_3^2 - 36c_s^4\omega_3^2\omega_3^2 + 8c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 + 4\omega_1^2v_3^2\omega_2\omega_3^2 + 72v_2^4\omega_1^2\omega_2^2\omega_3^2 + 96v_2^2\omega_1v_3^2\omega_3^2\omega_3^2 + 18c_s^2\omega_1^2\omega_3^2\omega_3 + 8\omega_1\omega_3^2\omega_3^2 - 4\omega_1^3v_3^2\omega_3^2 +$
$4c_s^2\omega_1^3\omega_2\omega_3 - 20c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 + 42c_s^4\omega_1\omega_3^2\omega_3^2 + 8c_s^2\omega_1v_3^2\omega_3^2\omega_3 + 8v_3^2\omega_3^2\omega_3^2 - 24v_2^2\omega_1^3\omega_2^2\omega_3^2 + 12c_s^2\omega_1^3\omega_2^2 - 216c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 + 24v_2^2\omega_1^2v_3^2\omega_2\omega_3^2 -$
$8\omega_1v_3^2\omega_3^2\omega_3^2 - 72v_2^2v_3^2\omega_3^2\omega_3^2 + \omega_1^3\omega_2^2\omega_3^2 - 34c_s^2\omega_1^2\omega_2^2\omega_3^2 + 24v_2^2\omega_1^2\omega_3^2\omega_3^2 - 12c_s^4\omega_1^2\omega_2^2\omega_3 - 2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 84v_2^2\omega_1^3\omega_2\omega_3^2 - \omega_1^2\omega_3^2\omega_3^2 - 48v_2^2\omega_1^2v_3^2\omega_2^2\omega_3^2 +$
$72c_s^4\omega_1^3\omega_3^2 + 40c_s^2\omega_1^2\omega_2\omega_3^2 - 72v_2^4\omega_1\omega_2^2\omega_3^2 - 8c_s^2\omega_1\omega_3^3\omega_3 + 48v_2^4\omega_3^2\omega_3^2 - 4\omega_1^3\omega_2\omega_3^2 - 84c_s^4\omega_1^3\omega_2\omega_3^2 - 4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 - 6c_s^4\omega_1^2\omega_3^2\omega_3^2 - 8c_s^2\omega_1\omega_2^2\omega_3^2 +$

$216c_s^2v_2^2\omega_1^3\omega_3^2+4\omega_1^2v_3^2\omega_2^2\omega_3^2+2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2-18c_s^2\omega_1^3\omega_2^2\omega_3+216c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2-36v_2^4\omega_1\omega_3^2\omega_3^2-5c_s^2\omega_1^3\omega_2^2\omega_3^2+18c_s^2\omega_1^3v_3^2\omega_2^2\omega_3-24v_2^2\omega_1^2v_3^2\omega_2^2\omega_3^2-$
$4\omega_1^2\omega_2^2\omega_3^2+12c_s^2\omega_1^2v_3^2\omega_3^2-52c_s^2\omega_1^3\omega_3^2-2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2-12c_s^4\omega_1^2\omega_2\omega_3-8\omega_3^2\omega_3^2-20c_s^2v_3^2\omega_3^2\omega_3^2-\omega_1^3v_3^2\omega_2^2\omega_3^2-54c_s^4\omega_1^2\omega_3^2\omega_3+24v_2^2\omega_3^2\omega_3^2-$
$24v_2^2\omega_1^2\omega_2^2\omega_3^2-72c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2-22c_s^2\omega_1\omega_2^3\omega_3^2+16c_s^2\omega_1^3v_3^2\omega_3^2+\omega_1^2v_3^2\omega_3^2\omega_3^2-324c_s^2v_2^2\omega_1^3\omega_2\omega_3^2+42c_s^4\omega_1^2\omega_2^2\omega_3^2+24v_2^2\omega_1^3v_3^2\omega_2^2\omega_3^2-18c_s^2\omega_1^2v_3^2\omega_3^3\omega_3$

$C_{44}=-18c_s^2\omega_1^3\omega_2+27\omega_1v_3^2\omega_2^3\omega_3-27c_s^2\omega_1^2\omega_3^2-5\omega_1^3\omega_2^2\omega_3+81c_s^2\omega_1^2\omega_2^2\omega_3-24v_3^2\omega_2^3\omega_3+6\omega_1^2v_3^2\omega_2\omega_3+12\omega_1^3v_3^2\omega_3-18c_s^2\omega_1^2\omega_2^2+3\omega_1\omega_2^3\omega_3-$
$12\omega_1\omega_2^3-66v_2^2\omega_1\omega_2^3\omega_3-12v_2^2\omega_1^2\omega_2\omega_3-6\omega_1^2v_3^2\omega_2^2-18\omega_1^3v_3^2\omega_2\omega_3-15c_s^2\omega_1^2\omega_2^3\omega_3+6\omega_1^2\omega_2\omega_3+6\omega_1v_3^2\omega_2^2\omega_3-108c_s^2\omega_1^3\omega_2\omega_3-$
$120v_2^2\omega_1\omega_2^2\omega_3-9\omega_1^2v_3^2\omega_3^2+42\omega_1\omega_2^2\omega_3+27c_s^2\omega_1^3\omega_2^2+48v_2^2\omega_1^3\omega_3-36\omega_1^3\omega_3-12c_s^2\omega_2^3\omega_3-6\omega_1^3v_3^2\omega_2+27c_s^2\omega_1\omega_2^3\omega_3-5\omega_1^2v_3^2\omega_2^3\omega_3+$
$84c_s^2\omega_1^3\omega_3-12\omega_2^3\omega_3+5\omega_1^3v_3^2\omega_2^2\omega_3-9\omega_1^3\omega_2^2+84v_2^2\omega_2^3\omega_3+132v_2^2\omega_1^2\omega_2^2\omega_3+12\omega_1v_3^2\omega_3^2+15c_s^2\omega_1^3\omega_2^2\omega_3-51\omega_1^2\omega_2^2\omega_3-54c_s^2\omega_1\omega_2^2\omega_3-$
$9\omega_1^2v_3^2\omega_2^2\omega_3+6\omega_1^3\omega_2+9\omega_1^2\omega_3^2+36c_s^2\omega_1\omega_3^2+5\omega_1^2\omega_3^2\omega_3-18c_s^2\omega_1^2\omega_2\omega_3+48\omega_1^3\omega_2\omega_3+6\omega_1^2\omega_2^2+9\omega_1^3v_3^2\omega_2^2-66v_2^2\omega_1^3\omega_2\omega_3$

$C_{45}=24\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2-288\omega_4v_2^2\omega_1^2\omega_3^2\omega_3^2-48\omega_4^2v_2^2\omega_3^2\omega_3^2-24\omega_4^2v_2^4\omega_1\omega_3^2\omega_3-32\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2+108\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2+96\omega_4^2v_2^4\omega_1^2\omega_2\omega_3^2+$
$264\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2-40\omega_4^2c_s^2\omega_1^3\omega_3^2+24\omega_4^2v_2^4\omega_1^3\omega_2^2\omega_3^2-96\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3+72\omega_4^2v_2^2\omega_1^2\omega_3^2-108v_2^4\omega_1^2\omega_3^2\omega_3^2+36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3+288\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3-$
$28\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2+54\omega_4^2v_2^4\omega_1^3\omega_3^2-8\omega_4^2\omega_1^2\omega_2^2\omega_3^2-18\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2-36\omega_4v_2^4\omega_1^3\omega_2^2\omega_3+336\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2+60\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3+86\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3^2+$
$144\omega_4^2v_2^2\omega_1^2v_3^2\omega_2\omega_3^2+108\omega_4^2v_2^4\omega_1^3\omega_2^2\omega_3+48\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2-72\omega_4c_s^4\omega_1^2\omega_3^2\omega_3^2+64\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2+96\omega_4^2v_2^4\omega_1\omega_2^2\omega_3^2-16\omega_4^2c_s^2\omega_1\omega_2^3\omega_3+$
$324\omega_4c_s^2v_2^2\omega_1^3\omega_2^3\omega_3+72\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3+8\omega_4^2v_2^2\omega_1^2\omega_3^2\omega_3^2+40\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3+264\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3^2-54v_2^2\omega_1^3\omega_3^2\omega_3^2-12\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2+$
$72\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2+204\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2-16\omega_4^2\omega_2^3\omega_3^2-36\omega_4^2v_2^4\omega_1^3\omega_2^2-117\omega_4v_2^4\omega_1^3\omega_3^2\omega_3^2+576\omega_4^2v_2^2\omega_1v_3^2\omega_3^2\omega_3^2+20\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2+192\omega_4^2v_2^4\omega_3^2\omega_3^2-$
$216\omega_4^2v_2^2\omega_1^2\omega_3^2\omega_3-852\omega_4^2c_s^2v_2^2\omega_1\omega_3^2\omega_3^2+48\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3-72\omega_4v_2^4\omega_1\omega_3^2\omega_3^2-8\omega_4^2\omega_1^3\omega_2\omega_3^2-72\omega_4^2v_2^4\omega_1^2\omega_3^2+24\omega_4^2v_2^2\omega_1^3\omega_2\omega_3-$
$297\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3+32\omega_4^2c_s^4\omega_1^3\omega_3^2+108\omega_4v_2^4\omega_1^3\omega_2^2\omega_3-2\omega_4^2\omega_1^2\omega_3^2\omega_3^2+162c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2-18\omega_4^2c_s^2\omega_1^3\omega_3^2\omega_3-54\omega_4^2v_2^2\omega_1^3\omega_3^2+38\omega_4^2v_2^4\omega_1^3\omega_2^2\omega_3^2+$
$36\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2+6\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2-96\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2-297\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2+48\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2+24\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2+168\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2+$
$16\omega_4^2c_s^4\omega_1^3\omega_2\omega_3+144\omega_4^2v_2^2\omega_1v_3^2\omega_2^2\omega_3^2+36\omega_4v_2^4\omega_1^3\omega_2^2\omega_3^2-36\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3+240\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2+24\omega_4^2c_s^2v_3^2\omega_3^2\omega_3^2-6\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2-$
$72\omega_4c_s^2\omega_1\omega_3^2\omega_3^2+180\omega_4v_2^2\omega_1^2\omega_3^2\omega_3-108\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3-288\omega_4^2v_2^2\omega_1^3v_3^2\omega_2\omega_3^2-288\omega_4^2v_2^4\omega_1\omega_3^2\omega_3^2+36\omega_4^2v_2^2\omega_1^3\omega_2^2-12\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3^2-$
$117\omega_4^2v_2^4\omega_1^3\omega_3^2\omega_3-24\omega_4^2\omega_1^3v_3^2\omega_3^2+16\omega_4^2\omega_1\omega_3^2\omega_3^2-492\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2-36\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3+108v_2^2\omega_1^2\omega_3^2\omega_3^2-24\omega_4^2v_2^2\omega_1^3\omega_3^2\omega_3^2+288\omega_4v_2^4\omega_1^2\omega_3^2\omega_3^2+$
$24\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2+162\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2-144\omega_4^2v_2^4\omega_1^2\omega_2\omega_3^2+16\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2+24\omega_4^2v_2^2\omega_1\omega_3^2\omega_3+174\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2+144\omega_4^2v_2^2\omega_1^3v_3^2\omega_2^2\omega_3^2-$
$36\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2+80\omega_4^2c_s^4\omega_2^2\omega_3^2-60\omega_4^2v_2^4\omega_1^2\omega_2^2\omega_3+72\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3-540\omega_4c_s^2v_2^2\omega_1^2\omega_3^2\omega_3+36\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2-48\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2+48\omega_4^2v_2^4\omega_1^3\omega_3^2+$
$36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3+18\omega_4c_s^4\omega_1^3\omega_2^2\omega_3^2-72\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3+72\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2+2\omega_4^2\omega_1^3\omega_2^2\omega_3^2-108\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2+16\omega_4^2c_s^4\omega_1\omega_3^2\omega_3-144\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2-$
$144\omega_4^2v_2^2\omega_1^2v_3^2\omega_3^2\omega_3^2-56\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2-108\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3-6\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2-108\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3-108\omega_4^2v_2^4\omega_1^3\omega_2\omega_3^2-108\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2+$
$48\omega_4^2v_3^2\omega_3^2\omega_3^2+117\omega_4v_2^2\omega_1^3\omega_3^2\omega_3^2+54v_2^4\omega_1^3\omega_3^2\omega_3^2-40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3+40\omega_4^2v_2^4\omega_1^2\omega_3^2\omega_3^2+24\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2-48\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2-24\omega_4^2v_2^4\omega_1^3\omega_2\omega_3-$
$108\omega_4v_2^2\omega_1^3\omega_3^2\omega_3+216\omega_4^2v_2^4\omega_1^2\omega_3^3\omega_3-12\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2-432\omega_4^2v_2^2v_3^2\omega_3^2\omega_3^2+48\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3+72\omega_4v_2^2\omega_1\omega_3^2\omega_3^2-12\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2-$
$216\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2-36\omega_4v_2^4\omega_1^2\omega_2^2\omega_3^2+8\omega_4^2c_s^2\omega_3^2\omega_3^2-492\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2-172\omega_4^2c_s^4\omega_1\omega_3^2\omega_3^2-96\omega_4^2v_2^2\omega_1^3\omega_3^2+16\omega_4^2\omega_1\omega_2^2\omega_3^2+432\omega_4^2c_s^2v_2^2\omega_3^2\omega_3^2-$
$86\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2+18\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3-144\omega_4^2v_2^4\omega_1^2\omega_2^2\omega_3^2+36\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3+72\omega_4c_s^4\omega_1\omega_3^2\omega_3^2+24\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2-324c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2+8\omega_4^2\omega_1^3\omega_3^2+$
$12\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2-16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3+648\omega_4c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2-36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3^2-8\omega_4^2\omega_1^2\omega_2\omega_3^2+117\omega_4^2v_2^2\omega_1^3\omega_3^2\omega_3-72\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3-$
$2\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2-180\omega_4v_2^4\omega_1^2\omega_3^2\omega_3+468\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3+96\omega_4^2v_2^2\omega_1\omega_3^2\omega_3^2-288\omega_4^2v_2^2\omega_1^2v_3^2\omega_2^2\omega_3^2+144\omega_4^2v_2^2\omega_1^3v_3^2\omega_3^2$

$C_{46}=-6v_1^2\omega_4c_s^2\omega_1^2\omega_5\omega_3^2+32\omega_4^2c_s^4\omega_1^2\omega_3^2+6\omega_4\omega_1^2v_3^2\omega_5\omega_3^2-8\omega_4^2c_s^4\omega_1^2\omega_5\omega_3+8\omega_4c_s^2\omega_1\omega_5\omega_3^2+6\omega_4^2\omega_1^2v_3^4\omega_5\omega_3-6\omega_4^2\omega_1^2v_3^4\omega_5-6v_1^2\omega_4^2\omega_1^2\omega_5\omega_3-$
$2\omega_4^2c_s^2\omega_1^3\omega_5\omega_3+3\omega_4\omega_1^3v_3^4\omega_5\omega_3^2+6v_1^4\omega_4^2\omega_1^2\omega_5\omega_3+3\omega_4^2\omega_1^3v_3^2\omega_5\omega_3-3\omega_4^2\omega_1^3v_3^2\omega_5+18v_1^2c_s^2\omega_1^2\omega_5\omega_3^2+6v_1^2\omega_4^2\omega_1^2\omega_5+6v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_3-$
$8\omega_4^2c_s^4\omega_1^3\omega_3^2+6v_1^4\omega_1^2\omega_5\omega_3^2-6\omega_4^2\omega_1^2v_3^2\omega_5\omega_3+8\omega_4c_s^4\omega_1^2\omega_5\omega_3^2-6\omega_4\omega_1^2v_3^4\omega_5\omega_3^2-8\omega_4^2c_s^2\omega_1\omega_5\omega_3-18\omega_4^2c_s^2\omega_1^2v_3^2\omega_5+3v_1^2\omega_1^3\omega_5\omega_3^2-3v_1^2\omega_4^2\omega_1^3\omega_5+$
$2\omega_4c_s^2\omega_1^3\omega_5\omega_3^2-12\omega_4c_s^2\omega_1v_3^2\omega_5\omega_3^2+3v_1^4\omega_4\omega_1^3\omega_5\omega_3^2-3\omega_4^2\omega_1^3v_3^4\omega_5\omega_3-3\omega_4\omega_1^3v_3^2\omega_5\omega_3^2-3v_1^2\omega_4\omega_1^3\omega_5\omega_3^2+12\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_3+6\omega_4^2\omega_1^2v_3^2\omega_5-$
$3v_1^4\omega_4^2\omega_1^3\omega_5\omega_3+12v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_3-6\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_3-9v_1^2c_s^2\omega_1^3\omega_5\omega_3^2-18v_1^2\omega_4^2c_s^2\omega_1^2\omega_5-9c_s^2\omega_1^3v_3^2\omega_5\omega_3^2+8\omega_4^2c_s^2\omega_1^2\omega_5\omega_3+3v_1^2\omega_4^2\omega_1^3\omega_5\omega_3+$
$3\omega_4^2\omega_1^3v_3^4\omega_5-8\omega_4c_s^4\omega_1\omega_5\omega_3^2+6\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_3^2-6\omega_1^2v_3^2\omega_5\omega_3^2-8\omega_4^2c_s^4\omega_1\omega_5\omega_3^2+2\omega_4^2c_s^4\omega_1^3\omega_5\omega_3+6v_1^2\omega_4c_s^2\omega_1^3\omega_5\omega_3^2-6v_1^4\omega_4^2\omega_1^2\omega_5-$
$3\omega_1^3v_3^4\omega_5\omega_3^2-12v_1^2\omega_4c_s^2\omega_1\omega_5\omega_3^2+6v_1^2\omega_4\omega_1^2\omega_5\omega_3^2-8\omega_4c_s^2\omega_1^2\omega_5\omega_3^2-6v_1^2\omega_1^2\omega_5\omega_3^2+9v_1^2\omega_4^2c_s^2\omega_1^3\omega_5+8\omega_4^2c_s^4\omega_1\omega_5\omega_3-6v_1^4\omega_4\omega_1^2\omega_5\omega_3^2+$
$6\omega_1^2v_3^4\omega_5\omega_3^2+16\omega_4^2c_s^4\omega_5\omega_3^2+6\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_3+9\omega_4^2c_s\omega_1^3v_3^2\omega_5-2\omega_4c_s^4\omega_1^3\omega_5\omega_3^2+3v_1^4\omega_4^2\omega_1^3\omega_5-3v_1^4\omega_1^3\omega_5\omega_3^2-32\omega_4^2c_s^4\omega_1\omega_3^2-$
$6v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_3-6\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_3^2+3\omega_1^3v_3^2\omega_5\omega_3^2+18c_s^2\omega_1^2v_3^2\omega_5\omega_3^2$

$C_{47}=-192\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2+128\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2-104\omega_4^2c_s^2\omega_1^3\omega_3^2-8v_1^2\omega_4^2\omega_3^2\omega_3^2-168\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2+16\omega_4^2\omega_1^2\omega_2^2\omega_3^2-27\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2-$
$60v_1^2\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2-162c_s^4\omega_1^3\omega_3^2\omega_3^2-30\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2+32v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2+48\omega_4^2\omega_1^3v_3^4\omega_3^2-108c_s^2\omega_1^2\omega_3^2\omega_3^2-432\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2-$
$324\omega_4c_s^4\omega_1^2\omega_3^2\omega_3^2+80\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2+8v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2+56\omega_4^2c_s^2\omega_1\omega_2^3\omega_3+192\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3-24v_1^2\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2+108v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3-$
$432\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2+8\omega_4^2\omega_3^3\omega_3^2-8v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3+192\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2-8\omega_4^2\omega_1^3\omega_2\omega_3^2-10v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2+72\omega_4^2\omega_1^2v_3^4\omega_2^2\omega_3^2-$
$96v_1^2\omega_1^2\omega_1v_3^2\omega_2^2\omega_3^2+144\omega_4^2c_s^4\omega_1^3\omega_3^2-40v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2+108v_1^2c_s^2\omega_1^2\omega_3^2\omega_3^2+27\omega_4^2c_s^2\omega_1^3\omega_3^3\omega_3-432\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2+64\omega_4^2c_s^2\omega_1\omega_3^3\omega_3^2+$
$432\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2-60v_1^2\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2-24\omega_4^2c_s^4\omega_1^3\omega_2\omega_3+32v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2+324\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3+432\omega_4^2c_s^2v_3^2\omega_3^2\omega_3^2+64v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3-$
$108v_1^2\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2-10\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2-432\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3^2-16v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2-96\omega_4^2\omega_1^3v_3^2\omega_3^2-8\omega_4^2\omega_1\omega_3^2\omega_3^2-27v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3-$
$36\omega_4^2\omega_1v_3^4\omega_3^2\omega_3^2-54\omega_4^2c_s^2\omega_1^3\omega_3^2+96\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2+8v_1^2\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2-216\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2+10\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2+144\omega_4^2c_s^4\omega_3^2\omega_3^2+54c_s^2\omega_1^3\omega_3^2\omega_3^2-$
$252\omega_4^2c_s^4\omega_1^2\omega_3^2+8v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2+112\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2+96\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2+81\omega_4c_s^4\omega_1^3\omega_3^3\omega_3^2-72\omega_4^2\omega_1^2v_3^4\omega_2\omega_3^2+108\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2-168\omega_4^2c_s^4\omega_1\omega_3^2\omega_3-$
$72\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2+10v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2+24\omega_4^2c_s^2\omega_1^3\omega_2^2+324c_s^4\omega_1^2\omega_3^2\omega_3^2+8v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2-96\omega_4^2v_3^2\omega_3^2\omega_3^2-84v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2-64\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3+$
$864\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2+32v_1^2\omega_4^2c_s^2\omega_2^2\omega_3^2-24v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2+96\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2+27v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2+162\omega_4^2c_s^4\omega_1^3\omega_3^2-176\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2-$
$36\omega_4^2\omega_1^3v_3^4\omega_2\omega_3^2-56v_1^2\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2-8v_1^2\omega_4^2\omega_1^3\omega_3^2-104\omega_4^2c_s^2\omega_3^2\omega_3^2+120v_1^2\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2-24\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2-8\omega_4^2\omega_1\omega_2^2\omega_3^2+72v_1^2\omega_4^2\omega_1^2v_3^2\omega_3^2\omega_3^2+$
$84\omega_4^2c_s^2\omega_1^2\omega_3^2-81\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3-108\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3+96\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2+8\omega_4^2\omega_1^3\omega_3^2+8v_1^2\omega_4^2\omega_1\omega_3^2\omega_3^2+8\omega_4^2c_s^2\omega_1^3\omega_2\omega_3+48v_1^2\omega_4^2\omega_1^3v_3^2\omega_3^2+$
$54v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2-72\omega_4^2c_s^4\omega_1^3\omega_2^2-8\omega_4^2\omega_1^2\omega_2\omega_3^2+24\omega_4^2v_3^4\omega_3^2\omega_3^2+30\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2-54v_1^2c_s^2\omega_1^3\omega_3^2\omega_3^2-56v_1^2\omega_4^2c_s^2\omega_1\omega_3^2\omega_3-8v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2$

$C_{48}=48\omega_4^2\omega_1^3v_3^4\omega_5\omega_3^2+24v_1^2\omega_4^2\omega_1\omega_5\omega_3^2\omega_3^2+132\omega_4^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2+144\omega_4\omega_1^2v_3^2\omega_5\omega_3^2\omega_3^2+132v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_3^2\omega_3^2-72\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2\omega_3+$
$72\omega_4^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2-216\omega_4^2c_s^2v_3^2\omega_5\omega_3^2\omega_3^2-108\omega_1^2v_3^2\omega_5\omega_3^2\omega_3^2+36\omega_4\omega_1^3v_3^4\omega_5\omega_2^2\omega_3^2+108\omega_4c_s^2\omega_1^3v_3^2\omega_5\omega_3^2\omega_3^2+288\omega_4c_s^2\omega_1\omega_5\omega_3^2\omega_3^2+$
$160\omega_4^2c_s^4\omega_1\omega_5\omega_3^2\omega_3-36\omega_4^2\omega_1^2v_3^2\omega_5\omega_3^2\omega_3-162c_s^2\omega_1^3v_3^2\omega_5\omega_3^2\omega_3^2+16\omega_4^2\omega_1^2\omega_5\omega_3^2\omega_3^2-180v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2\omega_3-288\omega_4c_s^4\omega_1\omega_5\omega_3^2\omega_3^2-$
$160\omega_4^2c_s^2\omega_1\omega_5\omega_3^2\omega_3-216\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_3^2+288\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3^2+72\omega_4^2\omega_1^3v_3^4\omega_5\omega_2^2\omega_3-60\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_3^2\omega_3^2+36\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3^2-$
$12\omega_4^2\omega_1v_3^2\omega_5\omega_3^3\omega_3-108\omega_4c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3+24v_1^2\omega_4^2\omega_1^2\omega_5\omega_2\omega_3^2-56\omega_4^2c_s^4\omega_1\omega_5\omega_2^2\omega_3^2+300\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_3^2\omega_3^2-468v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_3^2\omega_3+$
$64\omega_4^2c_s^2\omega_1\omega_5\omega_2^2\omega_3^2-36\omega_4\omega_1v_3^2\omega_5\omega_3^2\omega_3^2-28\omega_4^2c_s^4\omega_1^3\omega_5\omega_2\omega_3^2+108\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3+648v_1^2\omega_4c_s^2\omega_1^2\omega_5\omega_3^2\omega_3^2-84\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2-$
$96\omega_4^2v_3^4\omega_5\omega_3^2\omega_3^2-54\omega_4^2\omega_1^3v_3^4\omega_5\omega_3^2\omega_3+162v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2\omega_3+48\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2+16\omega_4^2c_s^4\omega_1^3\omega_5\omega_2\omega_3-96\omega_4^2\omega_1^3v_3^2\omega_5\omega_3^2-12\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3+$

$24v_1^2\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2+64\omega_4^2c_s^2\omega_1^2\omega_5\omega_2\omega_3^2-16\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3-48\omega_4^2\omega_1v_3^2\omega_5\omega_2^3\omega_3^2+24\omega_4^2\omega_1^2v_3^4\omega_5\omega_2\omega_3^2-40\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2-162v_1^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3\omega_3^2+$
$108\omega_4c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2+54\omega_4\omega_1^3v_3^4\omega_5\omega_2^3\omega_3^2+24v_1^2\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2-56\omega_4^2c_s^4\omega_1^2\omega_5\omega_2\omega_3^2-108\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2-54\omega_1^3v_3^4\omega_5\omega_2^3\omega_3^2-6v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2+$
$36\omega_4\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2+180\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_2^3\omega_3+18\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2+216v_1^2\omega_4^2v_3^2\omega_5\omega_2^3\omega_3^2+27\omega_4c_s^2v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2+18\omega_4^2\omega_1^3v_3^4\omega_5\omega_2^2\omega_3^2+$
$6v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2+36\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3^2-72\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3-72v_1^2\omega_4^2\omega_1^2v_3^2\omega_5\omega_2\omega_3^2-36\omega_4\omega_1^2v_3^2\omega_5\omega_2^3\omega_3+264v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3-$
$24\omega_4^2c_s^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2+24\omega_4^2\omega_1^3v_3^2\omega_5\omega_2\omega_3+162\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^3-348\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2-88\omega_4^2c_s^2\omega_5\omega_2^3\omega_3^2+8\omega_4^2c_s^4\omega_1\omega_5\omega_2^3\omega_3^2-36\omega_4\omega_1^3v_3^4\omega_5\omega_2^2\omega_3+$
$288\omega_4c_s^4\omega_1^2\omega_5\omega_2^3\omega_3^2+24\omega_4^2\omega_1v_3^4\omega_5\omega_2^2\omega_3^2+216\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3+108\omega_1^2v_3^4\omega_5\omega_2^3\omega_3^2+24v_1^2\omega_4^2c_s^2\omega_5^3\omega_3-2\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2-36\omega_4\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2-$
$6\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3^2+8\omega_4^2\omega_1^3\omega_5\omega_3^2+54\omega_4^2\omega_1^3v_3^4\omega_5\omega_3^2-12v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3^2-144\omega_4\omega_1^2v_3^4\omega_5\omega_2^3\omega_3^2-108\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2-72\omega_4^2\omega_1^3v_3^4\omega_5\omega_2\omega_3^2-$
$8\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2+144v_1^2\omega_4^2\omega_1^3v_3^2\omega_5\omega_3^2-72\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3+2\omega_4^2v_2^4\omega_1^3\omega_5\omega_2^2\omega_3^2+360v_1^2\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^2\omega_3^2-288\omega_4c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2-216\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3\omega_3+$
$36\omega_4^2\omega_1^2v_3^4\omega_5\omega_2^3\omega_3-8\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2+60\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2-168v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2\omega_3^2-72\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3-648v_1^2\omega_4c_s^2\omega_1\omega_5\omega_2^3\omega_3^2-$
$36\omega_4^2\omega_1^3v_3^4\omega_5\omega_2^2-24\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2\omega_3^2+72\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^3-2\omega_4^2v_2^4\omega_1^2\omega_5\omega_3^2\omega_3^2-288v_1^2\omega_4^2\omega_1v_3^2\omega_5\omega_2^2\omega_3^2+8\omega_4^2\omega_5\omega_2^3\omega_3^2+108\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3-$
$72\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3^2+12\omega_4^2\omega_1v_3^4\omega_5\omega_2^3\omega_3-180v_1^2\omega_4^2\omega_1^3v_3^2\omega_5\omega_2\omega_3^2+9\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^3\omega_3-72\omega_4^2c_s^4\omega_1^3\omega_5^2\omega_3+9\omega_4v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2+108\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2-$
$36\omega_4^2\omega_1^2v_3^4\omega_5\omega_2^2\omega_3^2+2\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2+24\omega_4^2v_3^2\omega_5\omega_2^3\omega_3^2-108\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3+72\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3+336v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3-9\omega_4^2v_2^4\omega_1^3\omega_5\omega_2^3\omega_3-$
$9\omega_4v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2+36\omega_4\omega_1v_3^4\omega_5\omega_2^3\omega_3^2+56\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2\omega_3^2+12\omega_4^2\omega_1^2v_3^4\omega_5\omega_2^2\omega_3-48v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3^2-4\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2-120v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3^2-$
$54\omega_4^2\omega_1^3v_3^2\omega_5\omega_3^2+54\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3+324c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2-24v_1^2\omega_4^2\omega_5\omega_2^3\omega_3^2+112\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2\omega_3-6\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2+54\omega_1^3v_3^2\omega_5\omega_2^3\omega_3^2-$
$27\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_3^2\omega_3+4\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3^2-8\omega_4^2\omega_1\omega_5\omega_3^2\omega_3^2-216\omega_4c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2-288\omega_4^2c_s^4\omega_1\omega_3^2\omega_3^2-36\omega_4\omega_1^2v_3^4\omega_5\omega_2^2\omega_3^2-112\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3+$
$108\omega_4^2\omega_1v_3^4\omega_5\omega_2^3\omega_3^2-54\omega_4\omega_1^3v_3^2\omega_5\omega_2^3\omega_3^2+32\omega_4^2c_s^4\omega_1^3\omega_5\omega_3^2-24v_1^2\omega_4^2\omega_1^3\omega_5\omega_3^2-72\omega_4^2\omega_1^2v_3^4\omega_5\omega_3^2-96v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2\omega_3^2-18\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2+$
$36\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^2-28\omega_4^2c_s^4\omega_1^2\omega_5\omega_3^2\omega_3^2-108\omega_4c_s^2\omega_1v_3^2\omega_5\omega_2^3\omega_3^2-18\omega_4^2\omega_1^2v_3^4\omega_5\omega_2^3\omega_3^2-72\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3\omega_3+180\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3-$
$72\omega_4c_s^4\omega_1^3\omega_5\omega_3^2\omega_3^2-8\omega_4^2\omega_1^2\omega_5\omega_2\omega_3^2+152\omega_4^2c_s^4\omega_5\omega_3^2\omega_3^2+4\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2+36\omega_4\omega_1^3v_3^2\omega_5\omega_2^2\omega_3+6\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2+264\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_3^2+$
$72\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2\omega_3+72\omega_4c_s^2\omega_1^3\omega_5\omega_3^2\omega_3^2-24\omega_4^2\omega_1^3v_3^4\omega_5\omega_2\omega_3+48v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3-180v_1^2\omega_4^2\omega_1v_3^2\omega_5\omega_3^2\omega_3^2+36\omega_4\omega_1^2v_3^4\omega_5\omega_3^2\omega_3$

$C_{49}=-2v_1^2\omega_4\omega_2\omega_3+27c_s^2\omega_1\omega_2\omega_3+2\omega_4\omega_2\omega_3+9\omega_4\omega_1\omega_2+6\omega_4c_s^2\omega_1\omega_3-9v_1^2\omega_4\omega_1\omega_2-6\omega_4c_s^2\omega_2\omega_3-9\omega_1\omega_2\omega_3+9v_1^2\omega_1\omega_2\omega_3+$
$2v_1^2\omega_4\omega_1\omega_3-2\omega_4\omega_1\omega_3-27\omega_4c_s^2\omega_1\omega_2$

$C_{50}=-6c_s^2\omega_1^3\omega_2-13\omega_1v_3^2\omega_2^3\omega_3+48c_s^2\omega_1^2\omega_2^2\omega_3+10v_3^2\omega_2^3\omega_3-3v_1^2\omega_1\omega_2^3\omega_3-22\omega_1^2v_3^2\omega_2\omega_3+16\omega_1^3v_3^2\omega_3+12c_s^2\omega_1^2\omega_2^2+10\omega_1\omega_2^3\omega_3+2\omega_1\omega_2^3+$
$4v_1^2\omega_2^3\omega_3-2v_1^2\omega_1^3\omega_2-4v_1^2\omega_1\omega_2^2\omega_3-13\omega_1^3v_3^2\omega_2\omega_3+14\omega_1^2\omega_2\omega_3-4\omega_1v_3^2\omega_2^2\omega_3-24c_s^2\omega_1^3\omega_2\omega_3+4v_1^2\omega_1^2\omega_2^2-4v_1^2\omega_1^2\omega_2\omega_3+8\omega_1\omega_2^2\omega_3-$
$12\omega_1^3\omega_3+26c_s^2\omega_2^3\omega_3+6v_1^2\omega_1^2\omega_2^2\omega_3-24c_s^2\omega_1\omega_2^3\omega_3+28c_s^2\omega_1^3\omega_3-2v_1^2\omega_1\omega_2^3-10\omega_2^3\omega_3-20\omega_1^2\omega_2^2\omega_3-24c_s^2\omega_1\omega_2^2\omega_3+26\omega_1^2v_3^2\omega_2^2\omega_3-$
$3v_1^2\omega_1^3\omega_2\omega_3+2\omega_1^3\omega_2-6c_s^2\omega_1\omega_2^2+4v_1^2\omega_1^3\omega_3-30c_s^2\omega_1^2\omega_2\omega_3+10\omega_1^3\omega_2\omega_3-4\omega_1^2\omega_2^2$

$C_{51}=-24\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2-4\omega_4^2v_2^2\omega_2^3\omega_3^2+28\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2+16\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2-52\omega_4^2c_s^2\omega_1^3\omega_3^2-102\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2+8\omega_4^2\omega_1^2\omega_2^2\omega_3^2+9\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2-$
$28\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2+54c_s^4\omega_1^3\omega_3^2\omega_3^2-119\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2-12\omega_4^2v_2^2\omega_1^2v_3^2\omega_2\omega_3^2-27\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3^2+24\omega_4^2\omega_1^3v_3^4\omega_3^2+36c_s^2\omega_1^2\omega_2^3\omega_3^2-3\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2+$
$108\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2+27\omega_4^2\omega_1^3v_3^4\omega_2^2\omega_3^2+4\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2+28\omega_4^2c_s^2\omega_1\omega_2^3\omega_3-28\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3+96\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3-4\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3^2-$
$324\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2+3\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2+4\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2+4\omega_4^2\omega_3^2\omega_3^2-30\omega_4^2v_2^2\omega_1v_3^2\omega_2^3\omega_3^2+24\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2+4\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3^2-4\omega_4^2\omega_1^3\omega_2\omega_3^2-$
$36\omega_4^2\omega_1^2v_3^4\omega_2^2\omega_3^2-9\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2\omega_3+72\omega_4^2c_s^4\omega_1^3\omega_3^2+18c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2+9\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3+27\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3^2-9\omega_4c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2-58\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2+$
$216\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2+8\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2-12\omega_4^2c_s^4\omega_1^3\omega_2\omega_3-48\omega_4^2v_2^2\omega_1v_3^2\omega_2^2\omega_3^2+108\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3-8\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2-216\omega_4^2c_s^2v_3^2\omega_3^2\omega_3^2-$
$27\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2-30\omega_4^2v_2^2\omega_1^3v_3^2\omega_2\omega_3^2-25\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2+324\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3^2-48\omega_4^2\omega_1^3v_3^2\omega_3^2-4\omega_4^2\omega_1\omega_2^3\omega_3^2-20\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2+$
$72\omega_4^2\omega_1v_3^4\omega_3^2\omega_3^2-18\omega_4^2c_s^2\omega_1^3\omega_3^2+66\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2+18\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2+4\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2-72\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2-32\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2+$
$49\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2-18c_s^2\omega_1^3\omega_3^2\omega_3^2-72\omega_4^2c_s^4\omega_1^2\omega_3^2+74\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2+12\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2-27\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2-36\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2-12\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2-$
$84\omega_4^2c_s^4\omega_1\omega_3^2\omega_3+4\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2+32\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3+12\omega_4^2c_s^2\omega_1^3\omega_2^2+15\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3-108c_s^4\omega_1^2\omega_3^2\omega_3^2+24\omega_4^2v_3^2\omega_3^2\omega_3^2-32\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3-$
$42\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2+54\omega_4^2c_s^4\omega_1^3\omega_3^2-16\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2-36\omega_4^2\omega_1^3v_3^4\omega_2\omega_3^2+36\omega_4^2v_2^2v_3^2\omega_2^2\omega_3^2+138\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2-24\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2+20\omega_4^2c_s^2\omega_2^3\omega_3^2+$
$16\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2+78\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2-4\omega_4^2v_2^2\omega_1^3\omega_3^2-4\omega_4^2\omega_1\omega_2^2\omega_3^2+16\omega_4^2c_s^2v_2^2\omega_2^3\omega_3^2+24\omega_4^2c_s^2\omega_1^2\omega_3^2+36\omega_4^2\omega_1v_3^4\omega_2^2\omega_3^2-27\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3-$
$36\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3+12\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2-36c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2+4\omega_4^2\omega_1^3\omega_3^2-138\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2+4\omega_4^2c_s^2\omega_1^3\omega_2\omega_3+36\omega_4c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2-36\omega_4^2c_s^4\omega_1^3\omega_2^2-$
$4\omega_4^2\omega_1^2\omega_2\omega_3^2-4\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3-60\omega_4^2v_3^4\omega_3^2\omega_3^2+35\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2+36\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3+4\omega_4^2v_2^2\omega_1\omega_3^2\omega_3^2+60\omega_4^2v_2^2\omega_1^2v_3^2\omega_2^2\omega_3^2+24\omega_4^2v_2^2\omega_1^3v_3^2\omega_3^2$

$C_{52}=56\omega_4c_s^4\omega_1^2\omega_2^2\omega_3-144\omega_4v_2^2\omega_1v_3^2\omega_2^2\omega_3^2+\omega_4v_2^2\omega_1^2\omega_3^2\omega_3^2+6\omega_4\omega_1^2v_3^4\omega_2^2\omega_3+6\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2+12\omega_4v_2^2\omega_1^3\omega_2\omega_3^2-68\omega_4c_s^4\omega_3^2\omega_3^2-$
$90\omega_4v_2^2\omega_1^3v_3^2\omega_2\omega_3^2+54c_s^2\omega_1v_3^2\omega_3^2\omega_3^2-48\omega_4\omega_1^3v_3^2\omega_3^2+9\omega_4\omega_1^3v_3^2\omega_3^2+36\omega_4\omega_1^2v_3^2\omega_3^2\omega_3+18c_s^4\omega_1^3\omega_3^2\omega_3^2-18\omega_4\omega_1^3v_3^4\omega_2^2+150\omega_4c_s^2\omega_1v_3^2\omega_3^2\omega_3^2-$
$4\omega_4\omega_1\omega_2^3\omega_3^2-8\omega_4c_s^2\omega_1\omega_3^2\omega_3+32\omega_4c_s^2\omega_1^2\omega_2\omega_3^2-18\omega_4\omega_1^2v_3^2\omega_3^2-36\omega_4c_s^2\omega_1^3v_3^2\omega_2\omega_3-14\omega_4c_s^4\omega_1^3\omega_2\omega_3^2+72c_s^2\omega_1^2\omega_3^2\omega_3^2+48\omega_4c_s^2v_2^2\omega_1\omega_3^2\omega_3^2-$
$14\omega_4c_s^4\omega_1^2\omega_3^2\omega_3^2+216c_s^2v_2^2\omega_1\omega_3^2\omega_3^2+12\omega_4v_3^2\omega_3^2\omega_3^2+4\omega_4\omega_1^3\omega_3^2-9\omega_4\omega_1^2v_3^4\omega_3^2\omega_3^2-36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3+54\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3-42\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2+$
$18\omega_1v_3^4\omega_3^2\omega_3^2+32\omega_4c_s^2\omega_1\omega_2^2\omega_3^2+12\omega_4c_s^2v_2^2\omega_1^3\omega_3^2+36\omega_4c_s^2\omega_1^3\omega_2^2\omega_3-12\omega_4c_s^2\omega_1^2v_3^2\omega_2\omega_3^2-12\omega_4c_s^2\omega_1v_3^2\omega_2^2\omega_3^2-4\omega_4\omega_1\omega_2^2\omega_3^2-12\omega_4v_2^2\omega_1^3\omega_3^2-$
$6\omega_4\omega_1^2v_3^2\omega_2^2\omega_3+28\omega_4c_s^2\omega_3^2\omega_3^2-2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2+8\omega_4c_s^4\omega_1^3\omega_2\omega_3+54c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2-174\omega_4c_s^2\omega_1^3v_3^2\omega_2\omega_3^2+54\omega_4c_s^2\omega_1^2v_3^2\omega_3^2+$
$60\omega_4c_s^2v_2^2\omega_1\omega_3^2\omega_3-48\omega_4c_s^2v_2^2\omega_1^2\omega_2\omega_3^2-24\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2-90\omega_4v_2^2\omega_1v_3^2\omega_2^2\omega_3^2-36\omega_4c_s^4\omega_1^2\omega_2^2\omega_3-9\omega_4\omega_1^3v_3^2\omega_2^2\omega_3^2-36\omega_4\omega_1^2v_3^4\omega_2^2\omega_3-$
$108\omega_4c_s^2v_3^2\omega_3^2\omega_3^2+72c_s^4\omega_1\omega_3^2\omega_3^2+\omega_4v_2^4\omega_1^3\omega_2^2\omega_3^2-18\omega_4c_s^2\omega_1^3\omega_2^2\omega_3-18\omega_4c_s^2\omega_1v_3^2\omega_2^2\omega_3-4\omega_4\omega_1^2\omega_2\omega_3^2+9\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2+36\omega_4\omega_1^3v_3^4\omega_2^2\omega_3+$
$132\omega_4c_s^2\omega_1^3v_3^2\omega_3^2-48\omega_4v_3^4\omega_2^2\omega_3^2-18\omega_4c_s^2\omega_1\omega_3^2\omega_3^2+28\omega_4c_s^4\omega_1^2\omega_2^2\omega_3^2-18\omega_1v_3^2\omega_3^2\omega_3^2-90\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3-18\omega_4\omega_1^2v_3^4\omega_2^2\omega_3^2-$
$84\omega_4c_s^2v_2^2\omega_1\omega_2^2\omega_3^2-36\omega_4v_2^2\omega_1^2v_3^2\omega_2\omega_3^2-6\omega_4\omega_1v_3^2\omega_2^3\omega_3+18\omega_4\omega_1^2v_3^4\omega_3^2-30\omega_4c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2-\omega_4v_2^4\omega_1^2\omega_2^3\omega_3^2-56\omega_4c_s^2\omega_1^2\omega_2^2\omega_3+8\omega_4\omega_1^2\omega_2^2\omega_3^2-$
$12\omega_4\omega_1^3v_3^4\omega_2\omega_3-54c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2-20\omega_4c_s^2\omega_1^3\omega_3^2+24\omega_4c_s^2v_2^2\omega_1^3\omega_2\omega_3-18c_s^2\omega_1^3\omega_2^2\omega_3^2+12\omega_4\omega_1^2v_3^4\omega_2\omega_3^2+12\omega_4v_2^2\omega_1\omega_2^2\omega_3^2-28\omega_4c_s^4\omega_1^2\omega_2\omega_3^2+$
$8\omega_4c_s^4\omega_1\omega_2^3\omega_3+180\omega_4v_2^2\omega_1^2v_3^2\omega_2^2\omega_3^2-126\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3-12\omega_4v_2^2\omega_3^2\omega_3^2-3\omega_4c_s^4\omega_1^3\omega_2^3\omega_3^2+18\omega_1^3v_3^4\omega_2^2\omega_3^2-18\omega_1^2v_3^2\omega_3^2\omega_3+2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2+$
$18\omega_4c_s^2\omega_1^3\omega_2\omega_3^2-18\omega_1^2v_3^4\omega_3^2\omega_3^2+18\omega_1^3v_3^2\omega_2^2\omega_3+36\omega_4\omega_1v_3^2\omega_2^2\omega_3^2+54\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3-72c_s^4\omega_1^2\omega_2^3\omega_3^2+66\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2+$
$30\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2-36\omega_4c_s^4\omega_1^3\omega_2^2\omega_3+18\omega_1^2v_3^2\omega_2^2\omega_3^2+54\omega_4\omega_1v_3^4\omega_2^3\omega_3^2+54c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2+24\omega_4\omega_1^3v_3^4\omega_3^2+66\omega_4\omega_1^3v_3^2\omega_2\omega_3^2+18\omega_4\omega_1^3v_3^2\omega_2^2+$
$12\omega_4v_2^2\omega_1^2\omega_2\omega_3^2-28\omega_4c_s^4\omega_1\omega_2^2\omega_3^2+132\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3+6\omega_4\omega_1v_3^4\omega_2^2\omega_3+2\omega_4c_s^4\omega_1^3\omega_2^2\omega_3^2+90\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3+12\omega_4\omega_1^3v_3^2\omega_2\omega_3-$
$54c_s^2\omega_1^3v_3^2\omega_2^2\omega_3+72\omega_4v_2^2\omega_1^3v_3^2\omega_3^2-54\omega_4c_s^2\omega_1^3v_3^2\omega_2^2+12\omega_4v_2^2\omega_1\omega_3^2\omega_3^2+36\omega_4c_s^2\omega_1^2\omega_3^2\omega_3+16\omega_4c_s^4\omega_1^3\omega_3^2-54c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2+$
$24\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2-8\omega_4c_s^2\omega_1^3\omega_2\omega_3-18\omega_1^3v_3^2\omega_2^2\omega_3^2+18\omega_1^2v_3^4\omega_3^2\omega_3-4\omega_4\omega_1^3\omega_2\omega_3^2-6\omega_4c_s^2v_2^2\omega_1^3\omega_2\omega_3^2+76\omega_4c_s^4\omega_1\omega_3^2\omega_3^2-216c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2-$
$72c_s^2\omega_1\omega_3^2\omega_3^2-96\omega_4c_s^2v_2^2\omega_3^2\omega_3^2-6\omega_4c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2+12\omega_4\omega_1v_3^4\omega_2^2\omega_3^2+18\omega_1^2v_3^2\omega_3^2\omega_3^2-18\omega_1^3v_3^2\omega_2^2\omega_3+18\omega_4c_s^4\omega_1^3\omega_3^2\omega_3-\omega_4v_2^2\omega_1^3\omega_2^2\omega_3^2-$
$90\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3-24\omega_4\omega_1v_3^2\omega_3^2\omega_3^2-18\omega_1^2v_3^4\omega_2^2\omega_3^2+4\omega_4\omega_2^2\omega_3^2-36\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2+54c_s^2\omega_1^2v_3^2\omega_2^2\omega_3-36\omega_4\omega_1^3v_3^4\omega_2\omega_3^2+108\omega_4v_2^2v_3^2\omega_2^2\omega_3^2$

$C_{53}=-18c_s^2\omega_1^3\omega_2+141\omega_1v_3^2\omega_2^2\omega_3-23\omega_1^3\omega_2^2\omega_3-114v_3^2\omega_2^2\omega_3+6\omega_1^2v_3^2\omega_2\omega_3+48\omega_1^3v_3^2\omega_3+36c_s^2\omega_1^2\omega_2^2-60\omega_1\omega_2^3\omega_3-6v_2^2\omega_1\omega_2^3+6\omega_1\omega_2^3-$
$9v_2^2\omega_1\omega_2^3\omega_3-12v_2^2\omega_1^2\omega_2\omega_3-75\omega_1^3v_3^2\omega_2\omega_3-42c_s^2\omega_1^2\omega_2^3\omega_3+6\omega_1^2\omega_2\omega_3+60\omega_1v_3^2\omega_2^2\omega_3-108c_s^2\omega_1^3\omega_2\omega_3-12v_2^2\omega_1\omega_2^2\omega_3-12\omega_1\omega_2^2\omega_3+12v_2^2\omega_1^3\omega_3-$

$36\omega_1^3\omega_3 - 66c_s^2\omega_2^3\omega_3 + 108c_s^2\omega_1\omega_2^3\omega_3 - 50\omega_1^2v_3^2\omega_2^3\omega_3 + 84c_s^2\omega_1^3\omega_3 + 42\omega_2^3\omega_3 + 50\omega_1^3v_3^2\omega_2^2\omega_3 + 12v_2^2\omega_2^3\omega_3 + 18v_2^2\omega_1^2\omega_2^2\omega_3 + 42c_s^2\omega_1^3\omega_2^2\omega_3 + 12\omega_1^2\omega_2^2\omega_3 - 66\omega_1^2v_3^2\omega_2^2\omega_3 - 6v_2^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 - 18c_s^2\omega_1\omega_2^3 + 23\omega_1^2\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2\omega_3 + 48\omega_1^3\omega_2\omega_3 - 12\omega_1^2\omega_2^2 + 12v_2^2\omega_1^2\omega_2^2 - 9v_2^2\omega_1^3\omega_2\omega_3$

$C_{54} = -18v_1^2\omega_4\omega_2\omega_3 + 2\omega_4\omega_1v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 6\omega_4\omega_1v_3^2\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 12\omega_4c_s^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_2\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4c_s^2\omega_1\omega_2\omega_3 - 9\omega_4\omega_1v_3^2\omega_2 - 9\omega_1v_3^2\omega_2\omega_3 + 18v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 + 4\omega_4v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{55} = -6\omega_4\omega_1v_3^2\omega_3 - 2v_1^2\omega_4^2\omega_1\omega_3 + 3\omega_1v_3^2\omega_3^2 + 2\omega_4^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_1\omega_3^2 - 3v_1^2\omega_1\omega_3^2 - 6\omega_4^2v_3^2 - 6\omega_4^2\omega_1 + 6v_1^2\omega_3^2 - 18\omega_4c_s^2\omega_3^2 + 36\omega_4c_s^2\omega_3 - 6v_1^2\omega_4^2 - 18\omega_4c_s^2\omega_1\omega_3 + 3\omega_4^2\omega_1v_3^2 - 36\omega_4^2c_s^2 + 12\omega_4^2 - 6\omega_4^2\omega_3 - 6v_1^2\omega_4\omega_3^2 + 18\omega_4^2c_s^2\omega_3 - 12\omega_4\omega_3 - 2\omega_4\omega_1\omega_3^2 + 3v_1^2\omega_4^2\omega_1 + 2v_1^2\omega_4\omega_1\omega_3^2 - 6v_3^2\omega_3^2 - 6\omega_4^2c_s^2\omega_1\omega_3 + 18\omega_4^2c_s^2\omega_1 + 6\omega_4\omega_3^2 + 6\omega_4\omega_1\omega_3 + 6v_1^2\omega_4^2\omega_3 + 12\omega_4v_3^2\omega_3$

$C_{56} = 104\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 104\omega_4^2c_s^2\omega_1^3\omega_3^2 - 56\omega_4^2c_s^2\omega_1v_3^2\omega_2^3\omega_3 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 276\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 9\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2 + 54c_s^4\omega_1^3\omega_2^3\omega_3^2 - 342\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 - 78\omega_4^2\omega_1^2v_3^4\omega_2^3\omega_3^2 + 48\omega_4^2\omega_1^3v_3^4\omega_3^2 + 36c_s^2\omega_1^2\omega_2^3\omega_3^2 - 56\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 - 6\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2 + 108\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 + 78\omega_4^2\omega_1^3v_3^4\omega_2^3\omega_3^2 - 88\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 + 6\omega_4^2v_3^2\omega_1^2\omega_2^3\omega_3^2 + 120\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 - 712\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 - 16\omega_4^2\omega_3^3\omega_3^2 + 12\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 + 16\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3 - 20\omega_4^2\omega_1^3\omega_2\omega_3^2 - 96\omega_4^2\omega_1^2v_3^4\omega_2^2\omega_3^2 + 144\omega_4^2c_s^4\omega_1^3\omega_3^2 - 14\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 9\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 + 6\omega_4^2v_2^4\omega_1^3\omega_2^2\omega_3^2 + 92\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3^2 + 448\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2 - 368\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 320\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 + 18\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 48\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 - 36\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2 + 216\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 - 784\omega_4^2c_s^2v_3^2\omega_2^3\omega_3^2 - 92\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 118\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 1232\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3^2 - 56\omega_4^2\omega_1^3v_3^2\omega_3^2 + 36\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 28\omega_4^2\omega_1\omega_3^2\omega_3^2 - 108\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 + 228\omega_4^2\omega_1v_3^4\omega_3^2\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2 + 152\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 + 6\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 - 144\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 - 36c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 18\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 + 184\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 - 288\omega_4^2c_s^4\omega_3^2\omega_3^2 - 18c_s^2\omega_1^3\omega_3^2\omega_3^2 + 72\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3 - 108\omega_4^2c_s^4\omega_1^2\omega_2^2 + 208\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 32\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 - 27\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 + 120\omega_4^2\omega_1^2v_3^4\omega_2\omega_3^2 - 36\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 - 36\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 + 14\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 168\omega_4^2c_s^4\omega_1\omega_3^2\omega_3 + 72\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2 + 18\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3^2 - 108c_s^4\omega_1^2\omega_2^2\omega_3^2 + 160\omega_4^2v_3^2\omega_3^2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 6\omega_4^2v_2^4\omega_1^2\omega_2^3\omega_3^2 - 412\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 256\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 + 54\omega_4^2c_s^4\omega_1^3\omega_2^3 + 52\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 132\omega_4^2\omega_1^3v_3^4\omega_2\omega_3^2 + 40\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 + 18\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 + 394\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 + 208\omega_4^2c_s^2\omega_2^3\omega_3^2 + 588\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1\omega_2^2\omega_3^2 - 6\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^2\omega_2^3 - 24\omega_4^2\omega_1v_3^4\omega_2^2\omega_3^2 - 27\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 - 72\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 + 18c_s^2\omega_1^3v_3^2\omega_2^3\omega_3^2 - 136\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 + 8\omega_4^2\omega_1^3\omega_3^2 - 460\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2 - 16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 - 9\omega_4c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 + 16\omega_4^2\omega_1^2\omega_2\omega_3^2 - 144\omega_4^2v_3^4\omega_3^2\omega_3^2 + 144\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 - 9\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^3\omega_3$

$C_{57} = 2\omega_4\omega_1v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 6\omega_4\omega_1v_3^2\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 - 18\omega_4v_2^2\omega_2\omega_3 + 12\omega_4c_s^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_2\omega_3 + 18\omega_4v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4c_s^2\omega_1\omega_2\omega_3 - 9\omega_4\omega_1v_3^2\omega_2 - 9\omega_1v_3^2\omega_2\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 + 4\omega_4v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{58} = 10\omega_4c_s^4\omega_1^2\omega_2^2\omega_3 - 18\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_4c_s^4\omega_1^3\omega_2 - 168\omega_4\omega_1^2v_3^4\omega_2^2\omega_3 + 36c_s^4\omega_1\omega_2^3\omega_3 + \omega_4v_2^4\omega_1^3\omega_2^2\omega_3 + 81\omega_4\omega_1^2v_3^2\omega_2^3\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 - 54\omega_4c_s^2\omega_1\omega_2^3\omega_3 - 264\omega_4v_3^4\omega_2^3\omega_3 + 144\omega_4c_s^2\omega_1^3v_3^2\omega_3 - 9\omega_4c_s^2\omega_1^3\omega_2^3 - 288\omega_4c_s^2\omega_1^3v_3^2\omega_2\omega_3 - 312\omega_4c_s^2v_3^2\omega_2^3\omega_3 + 20\omega_4c_s^4\omega_1^2\omega_2^2 - 81\omega_4\omega_1^3v_3^2\omega_2^2\omega_3 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 60\omega_4c_s^2\omega_1v_3^2\omega_2^2\omega_3 - 4\omega_4\omega_1\omega_2^2\omega_3 - 24\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 + 40\omega_4c_s^2\omega_2^3\omega_3 - 8\omega_4c_s^2\omega_1^3\omega_2 + 84\omega_4\omega_1^2v_3^2\omega_2^2\omega_3 + 18\omega_4c_s^2\omega_1^2\omega_2^3 + 32\omega_4c_s^2\omega_1\omega_2^2\omega_3 + 7\omega_4\omega_1^3\omega_2^2\omega_3 + 120\omega_4c_s^2\omega_1^2v_3^2\omega_2\omega_3 - 32\omega_4c_s^4\omega_1^3\omega_2\omega_3 - 54\omega_4c_s^2\omega_1^2v_3^2\omega_2^3 + 36c_s^2\omega_1^2\omega_2^3\omega_3 + 144\omega_4v_3^2\omega_2^3\omega_3 + 4\omega_4\omega_1^3\omega_3 + 9\omega_4c_s^4\omega_1^3\omega_2^3 - 29\omega_4c_s^4\omega_1^2\omega_2^3\omega_3 - 138\omega_4\omega_1^2v_3^4\omega_2^3\omega_3 + 108c_s^2\omega_1v_3^2\omega_2^3\omega_3 + 432\omega_4c_s^2\omega_1v_3^2\omega_2^3\omega_3 + 14\omega_4\omega_1\omega_2^3\omega_3 - 20\omega_4c_s^2\omega_1^2\omega_2^2 - 60\omega_4\omega_1^3v_3^2\omega_3 + 9c_s^4\omega_1^3\omega_2^3\omega_3 + 138\omega_4\omega_1^3v_3^4\omega_2^2\omega_3 - 16\omega_4c_s^2\omega_1^2\omega_2\omega_3 + \omega_4v_2^2\omega_1^2\omega_2^3\omega_3 + 3\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 18\omega_4c_s^4\omega_1^3\omega_2^2 + 60\omega_4c_s^2\omega_1^2v_3^2\omega_2^2 - 68\omega_4c_s^4\omega_2^3\omega_3 - 222\omega_4\omega_1v_3^2\omega_2^3\omega_3 - 8\omega_4\omega_2^3\omega_3 - 6\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 - 240\omega_4\omega_1^3v_3^4\omega_2\omega_3 + 27c_s^2\omega_1^3v_3^2\omega_2^3\omega_3 + 94\omega_4c_s^4\omega_1\omega_2^3\omega_3 + 24\omega_4c_s^2\omega_1v_3^2\omega_2^3 - 3\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 - 36c_s^2\omega_1\omega_2^3\omega_3 - \omega_4v_2^2\omega_1^3\omega_2^2\omega_3 - 24\omega_4\omega_1v_3^4\omega_2^2\omega_3 - 8\omega_4c_s^2\omega_1\omega_2^3 - 7\omega_4\omega_1^2\omega_2^3\omega_3 - 96\omega_4\omega_1^2v_3^2\omega_2\omega_3 + 16\omega_4c_s^4\omega_1^3\omega_3 - 90\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 - 10\omega_4\omega_1^3\omega_2\omega_3 + 17\omega_4c_s^4\omega_1^3\omega_2^2\omega_3 + 24\omega_4c_s^2\omega_1^3v_3^2\omega_2 + 408\omega_4\omega_1v_3^4\omega_2^3\omega_3 + 153\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 + 138\omega_4\omega_1^3v_3^2\omega_2\omega_3 + 96\omega_4\omega_1^3v_3^4\omega_3 - 28\omega_4c_s^4\omega_1\omega_2^2\omega_3 - 54\omega_4c_s^2\omega_1^3v_3^2\omega_2^2 + 24\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 + 12\omega_4\omega_1v_3^2\omega_2^2\omega_3 + 42\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 36c_s^4\omega_1^2\omega_2^3\omega_3 - 9c_s^2\omega_1^3\omega_2^3\omega_3 + 192\omega_4\omega_1^2v_3^4\omega_2\omega_3 + 27\omega_4c_s^2\omega_1^3v_3^2\omega_2^3 - 20\omega_4c_s^2\omega_1^3\omega_3 + 8\omega_4c_s^4\omega_1^2\omega_2\omega_3 + 8\omega_4c_s^4\omega_1\omega_2^3 - 3\omega_4c_s^4\omega_1^3\omega_2^3\omega_3 - 153\omega_4c_s^2\omega_1^2v_3^2\omega_2^3\omega_3 - \omega_4v_2^4\omega_1^2\omega_2^3\omega_3 - 108c_s^2\omega_1^2v_3^2\omega_2^3\omega_3 - 4\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{59} = -2c_s^2\omega_1 - 36c_s^2\omega_1v_3^2\omega_2 - 9\omega_1v_3^4\omega_2 + 6\omega_1v_3^4 + 24c_s^2\omega_1v_3^2 + 4c_s^4\omega_2 - 12v_3^2\omega_2 + 2c_s^4\omega_1 - 6\omega_1v_3^2 + 48c_s^2v_3^2\omega_2 + 3c_s^2\omega_1\omega_2 - 4c_s^2\omega_2 + 12v_3^4\omega_2 + 9\omega_1v_3^2\omega_2 - 3c_s^4\omega_1\omega_2$

$C_{60} = 9\omega_4^2\omega_1^3v_3^4 + \omega_4^2c_s^2\omega_1^3\omega_3^2 + 36\omega_4\omega_1^2v_3^4\omega_3^2 + 24\omega_4^2c_s^4\omega_1^2\omega_3^2 + 36\omega_4c_s^2\omega_1v_3^2\omega_3^2 + 15\omega_4\omega_1^3v_3^2\omega_3^2 + 54\omega_4c_s^2\omega_1^3v_3^2\omega_3 + 12\omega_4^2c_s^2\omega_1^2\omega_3 + 3\omega_4^2\omega_1^3v_3^4\omega_3^2 - 36\omega_4^2c_s^2\omega_1v_3^2\omega_3^2 - 12\omega_4c_s^2\omega_1\omega_3^2 - 36\omega_4^2c_s^2\omega_1^3v_3^2\omega_3 + 12\omega_4^2\omega_1^2v_3^2\omega_3^2 + 27\omega_4^2c_s^2\omega_1^3v_3^2 + 3\omega_4^2c_s^4\omega_1^3\omega_3 - 36\omega_4^2\omega_1^2v_3^2\omega_3 - 3\omega_4^2c_s^4\omega_1^3\omega_3^2 - 18\omega_1^2v_3^4\omega_3^2 - 15\omega_4^2\omega_1^3v_3^4\omega_3 + 24\omega_4^2c_s^4\omega_3^2 - 8\omega_4^2c_s^2\omega_1^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1v_3^2\omega_3 - 9\omega_1^3v_3^2\omega_3^2 - 54c_s^2\omega_1^2v_3^2\omega_3^2 + 6\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 - 18\omega_4^2\omega_1^2v_3^4 - 54\omega_4^2c_s^2\omega_1^2v_3^2 - 12\omega_4^2c_s^4\omega_1^2\omega_3 + 12\omega_4c_s^4\omega_1\omega_3^2 - 18\omega_4\omega_1^3v_3^2\omega_3 - 36\omega_4c_s^2\omega_1^3v_3^2\omega_3^2 - 3\omega_4^2c_s^2\omega_1^3\omega_3 - 36\omega_4\omega_1^2v_3^4\omega_3 - 3\omega_4^2\omega_1^3v_3^2\omega_3^2 + 12\omega_4^2c_s^4\omega_1\omega_3 + 18\omega_4^2\omega_1^2v_3^2 - 12\omega_4c_s^4\omega_1^2\omega_3^2 - 3\omega_4c_s^2\omega_1^3\omega_3^2 - 12\omega_4^2\omega_1^2v_3^4\omega_3^2 + 72\omega_4^2c_s^2\omega_1^2v_3^2\omega_3 - 108\omega_4c_s^2\omega_1^2v_3^2\omega_3 - 36\omega_4\omega_1^2v_3^2\omega_3 + 12\omega_4^2c_s^2\omega_1\omega_3^2 - 15\omega_4\omega_1^3v_3^4\omega_3^2 - 12\omega_4^2c_s^2\omega_1\omega_3 + 18\omega_4\omega_1^3v_3^4\omega_3 + 12\omega_4c_s^2\omega_1^2\omega_3^2 + 3\omega_4c_s^4\omega_1^3\omega_3^2 - 9\omega_4^2\omega_1^3v_3^2 + 72\omega_4c_s^2\omega_1^2v_3^2\omega_3^2 + 36\omega_4\omega_1^2v_3^2\omega_3 + 36\omega_4^2\omega_1^2v_3^4\omega_3 - 12\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2 + 27c_s^2\omega_1^3v_3^2\omega_3^2 + 18\omega_1^2v_3^2\omega_3^2 - 48\omega_4^2c_s^4\omega_1\omega_3^2 + 15\omega_4^2\omega_1^3v_3^2\omega_3 + 9\omega_1^3v_3^4\omega_3^2$

2.7.5 Conservation of momentum: ρv_3

$$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{v_1v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{v_2v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_2\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_2} + (v_3^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{2v_3\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\omega_1\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (6v_1^2\omega_1 - 2\omega_1 + 6c_s^2\omega_1 + 2\omega_2 + 3c_s^2\omega_1\omega_2 - 12c_s^2\omega_2 - 6v_1^2\omega_2)\frac{\delta_l^2}{6\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (\omega_1-\omega_2)\frac{2v_1\delta_l^2\rho}{\omega_1\omega_2\delta_t}\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\omega_1\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2\omega_1 + 6c_s^2\omega_1 + 6v_2^2\omega_1 + 2\omega_2 - 6v_2^2\omega_2 + 3c_s^2\omega_1\omega_2 - 12c_s^2\omega_2)\frac{\delta_l^2}{6\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3} + (\omega_1-\omega_2)\frac{2v_2\delta_l^2\rho}{\omega_1\omega_2\delta_t}\frac{\partial v_2}{\partial x_2}\frac{\partial v_2}{\partial x_3} + (3v_1^2\omega_1 - \omega_1 + c_s^2\omega_1 + \omega_2 - c_s^2\omega_2 - 3v_1^2\omega_2)\frac{\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_1} + (-\omega_1 + c_s^2\omega_1 + 3v_2^2\omega_1 + \omega_2 - 3v_2^2\omega_2 - c_s^2\omega_2)\frac{\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_2} + (-2\omega_1 + 4c_s^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 + 12v_3^2\omega_2 + 6\omega_1v_3^2 - 6c_s^2\omega_1\omega_2 + 8c_s^2\omega_2 - 9\omega_1v_3^2\omega_2)\frac{\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} +$$

$$
\begin{aligned}
&(2\omega_1 - 3\omega_1\omega_2 + 4\omega_2)\frac{v_3\delta_l^2\rho}{\omega_1\omega_2\delta_t}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_1)\frac{c_s^2\delta_l^2\rho}{2\omega_1\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} + (-2+\omega_1)\frac{c_s^2\delta_l^2\rho}{2\omega_1\delta_t}\frac{\partial^2 v_3}{\partial x_2^2} + \\
&(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial^2\rho}{\partial x_1\partial x_3} + \\
&(6v_1^2\omega_1 - 2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 + 3c_s^2\omega_1\omega_2 - 8c_s^2\omega_2 - 6v_1^2\omega_2)\frac{\delta_l^2\rho}{6\omega_1\omega_2\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + \\
&(-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_2\delta_l^2}{3\omega_1\omega_2\delta_t}\frac{\partial^2\rho}{\partial x_2\partial x_3} + \\
&(-2\omega_1 + 2c_s^2\omega_1 + 6v_2^2\omega_1 + 2\omega_2 - 6v_2^2\omega_2 + 3c_s^2\omega_1\omega_2 - 8c_s^2\omega_2)\frac{\delta_l^2\rho}{6\omega_1\omega_2\delta_t}\frac{\partial^2 v_2}{\partial x_2\partial x_3} + \\
&(-2\omega_1 + 6c_s^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 + 4v_3^2\omega_2 + 2\omega_1 v_3^2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2 - 3\omega_1 v_3^2\omega_2)\frac{v_3\delta_l^2}{6\omega_1\omega_2\delta_t}\frac{\partial^2\rho}{\partial x_3^2} + \\
&(-2\omega_1 + 2c_s^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 + 12v_3^2\omega_2 + 6\omega_1 v_3^2 - 3c_s^2\omega_1\omega_2 + 4c_s^2\omega_2 - 9\omega_1 v_3^2\omega_2)\frac{\delta_l^2\rho}{6\omega_1\omega_2\delta_t}\frac{\partial^2 v_3}{\partial x_3^2} + \\
&(-1 + v_1^2 + 3c_s^2)\frac{v_1 v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1 + 3v_1^2 + c_s^2)\frac{v_3\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_1\frac{v_1\delta_l^3\rho}{12\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_1^3} - \frac{c_s^2 v_3\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + \\
&C_2\frac{v_2\delta_l^3\rho}{4\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_2} - \frac{c_s^2 v_3\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_3\frac{v_1\delta_l^3\rho}{4\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2^2} + (-1 + v_2^2 + 3c_s^2)\frac{v_2 v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + \\
&(-1 + 3v_2^2 + c_s^2)\frac{v_3\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_4\frac{v_2\delta_l^3\rho}{12\omega_4\omega_1\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_2^3} + C_5\frac{\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + C_6\frac{v_1\delta_l^3\rho}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} - \frac{c_s^2 v_3\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + \\
&C_7\frac{v_1 v_2\delta_l^3}{3\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3} + C_8\frac{v_2\delta_l^3\rho}{6\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} + C_9\frac{v_1\delta_l^3\rho}{6\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + C_{10}\frac{\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + \\
&C_{11}\frac{v_2\delta_l^3\rho}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3} - \frac{c_s^2 v_3\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + C_{12}\frac{v_1 v_3\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} + C_{13}\frac{v_3\delta_l^3\rho}{12\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C_{14}\frac{v_1\delta_l^3\rho}{6\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + \\
&C_{15}\frac{v_2 v_3\delta_l^3}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} + C_{16}\frac{v_3\delta_l^3\rho}{12\omega_4\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C_{17}\frac{v_2\delta_l^3\rho}{6\omega_1^2\omega_2^2\omega_3\delta_t}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + C_{18}\frac{\delta_l^3}{12\omega_1^2\omega_2^2\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_{19}\frac{v_3\delta_l^3\rho}{6\omega_1^2\omega_2^2\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + \\
&C_{20}\frac{v_3\delta_l^4}{72\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + (10v_1^2\omega_1 - 4\omega_1 + 6c_s^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2 + 20v_1^2\omega_2 - 15v_1^2\omega_1\omega_2)\frac{v_1 v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} \\
&+ C_{21}\frac{\delta_l^4\rho}{24\omega_4^2\omega_1^3\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^4} + (-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_1 v_2 v_3\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + \\
&(-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_2 v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{22}\frac{v_1 v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{23}\frac{v_1 v_2\delta_l^4\rho}{8\omega_4^2\omega_1\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_2} + \\
&(3v_1^2\omega_1 - 2\omega_1 + 2c_s^2\omega_1 + 3v_2^2\omega_1 + 2\omega_2 - 3v_2^2\omega_2 + 6c_s^2\omega_1\omega_2 - 14c_s^2\omega_2 - 3v_1^2\omega_2)\frac{c_s^2 v_3\delta_l^4}{36\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + \\
&(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1 v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + \\
&(-\omega_1 + 3c_s^2\omega_1 + v_2^2\omega_1 + \omega_2 - v_2^2\omega_2 - 3c_s^2\omega_2)\frac{v_2 v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{24}\frac{\delta_l^4\rho}{8\omega_4^2\omega_1^3\omega_5\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} + \\
&(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1 v_2 v_3\delta_l^4}{12\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + C_{25}\frac{v_2 v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + \\
&(v_1^2\omega_1 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 - v_1^2\omega_2)\frac{v_1 v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{26}\frac{v_1 v_2\delta_l^4\rho}{8\omega_4^2\omega_1\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^3} + C_{27}\frac{v_3\delta_l^4}{72\omega_1\omega_2\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + \\
&(-4\omega_1 + 6c_s^2\omega_1 + 10v_2^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 - 15v_2^2\omega_1\omega_2 + 20v_2^2\omega_2 - 9c_s^2\omega_1\omega_2 + 12c_s^2\omega_2)\frac{v_2 v_3\delta_l^4\rho}{36\omega_1\omega_2\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + \\
&C_{28}\frac{\delta_l^4\rho}{24\omega_4^2\omega_1^3\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_2^4} + C_{29}\frac{v_1\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{30}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{31}\frac{v_1 v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C_{32}\frac{v_2\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{33}\frac{v_1 v_2\delta_l^4\rho}{6\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{34}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_5\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{35}\frac{v_2 v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{36}\frac{v_1\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{37}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_5\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{38}\frac{v_1 v_2\delta_l^4\rho}{6\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C_{39}\frac{v_1 v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{40}\frac{v_2\delta_l^4}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{41}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + \\
&C_{42}\frac{v_2 v_3\delta_l^4\rho}{72\omega_4\omega_1\omega_2\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_{43}\frac{v_3\delta_l^4}{36\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{44}\frac{v_1 v_3\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{45}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + \\
&C_{46}\frac{v_1 v_2 v_3\delta_l^4}{6\omega_1^3\omega_2^3\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C_{47}\frac{v_2 v_3\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{48}\frac{v_1 v_3\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{49}\frac{v_1 v_2\delta_l^4\rho}{6\omega_4\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} \\
&+ C_{50}\frac{v_3\delta_l^4}{36\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{51}\frac{v_2 v_3\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{52}\frac{\delta_l^4\rho}{36\omega_4\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{53}\frac{v_1\delta_l^4}{36\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + \\
&C_{54}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{55}\frac{v_1 v_3\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C_{56}\frac{v_2\delta_l^4}{36\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{57}\frac{\delta_l^4\rho}{72\omega_4^2\omega_1^3\omega_2^3\omega_3^2\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&C_{58}\frac{v_2 v_3\delta_l^4\rho}{18\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{59}\frac{v_3\delta_l^4}{36\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{60}\frac{\delta_l^4\rho}{36\omega_1^3\omega_2^3\omega_3\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$C_1 = 9\omega_4 c_s^2\omega_1 + 6v_1^2\omega_4\omega_3 + 6\omega_4 + 9c_s^2\omega_1\omega_3 - 6v_1^2\omega_4 + 3v_1^2\omega_4\omega_1 - 6v_1^2\omega_3 + 18\omega_4 c_s^2\omega_3 + 3v_1^2\omega_1\omega_3 - 6\omega_4 c_s^2\omega_1\omega_3 - 18c_s^2\omega_3 - 18\omega_4 c_s^2 - 6\omega_4\omega_3 + 6\omega_3 - 3\omega_1\omega_3 - 2v_1^2\omega_4\omega_1\omega_3 - 3\omega_4\omega_1 + 2\omega_4\omega_1\omega_3$

$C_2 = 3\omega_4 c_s^2\omega_1 + 2v_2^2\omega_3 + 2\omega_4 - 3c_s^2\omega_1\omega_3 + \omega_4 v_2^2\omega_1 + 6c_s^2\omega_3 - 6\omega_4 c_s^2 - 2\omega_3 - 2\omega_4 v_2^2 + \omega_1\omega_3 - v_2^2\omega_1\omega_3 - \omega_4\omega_1$

$C_3 = 3\omega_4 c_s^2\omega_1 + 2\omega_4 - 3c_s^2\omega_1\omega_3 - 2v_1^2\omega_4 + v_1^2\omega_4\omega_1 + 2v_1^2\omega_3 - v_1^2\omega_1\omega_3 + 6c_s^2\omega_3 - 6\omega_4 c_s^2 - 2\omega_3 + \omega_1\omega_3 - \omega_4\omega_1$

$C_4 = 9\omega_4 c_s^2\omega_1 - 6v_2^2\omega_3 + 6\omega_4 + 9c_s^2\omega_1\omega_3 + 6\omega_4 v_2^2\omega_3 + 18\omega_4 c_s^2\omega_3 - 6\omega_4 c_s^2\omega_1\omega_3 + 3\omega_4 v_2^2\omega_1 - 18c_s^2\omega_3 - 18\omega_4 c_s^2 - 2\omega_4 v_2^2\omega_1\omega_3 - 6\omega_4\omega_3 + 6\omega_3 - 6\omega_4 v_2^2 - 3\omega_1\omega_3 + 3v_2^2\omega_1\omega_3 - 3\omega_4\omega_1 + 2\omega_4\omega_1\omega_3$

$C_5 = 3v_1^2\omega_1^2\omega_2 - 2c_s^4\omega_1^2\omega_2 - 14c_s^4\omega_2^2 - 18v_1^2c_s^2\omega_2^2 - 4v_1^4\omega_2^2 - 2c_s^2\omega_1^2 + 2c_s^2\omega_1^2\omega_2 - 3v_1^4\omega_1^2\omega_2 - 15v_1^2c_s^2\omega_1^2\omega_2 - c_s^4\omega_1^2\omega_2^2 - 2v_1^2\omega_1^2 + 14c_s^4\omega_1\omega_2^2 + 6v_1^2c_s^2\omega_1\omega_2 - 3v_1^2\omega_1\omega_2^2 + 4v_1^2\omega_2^2 + 2v_1^4\omega_1\omega_2 + 2c_s^2\omega_2^2 + 12v_1^2c_s^2\omega_1^2 + 3v_1^4\omega_1\omega_2^2 - 2c_s^2\omega_1\omega_2^2 + 2v_1^4\omega_1^2 + 2c_s^4\omega_1^2 + 15v_1^2c_s^2\omega_1\omega_2^2 - 2v_1^2\omega_1\omega_2$

$C_6 = -5\omega_1\omega_2^2 - 11v_1^2\omega_1^2\omega_2 + 8c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 - 2\omega_1\omega_2 + 8v_1^2\omega_1^2 + 5\omega_1^2\omega_2 + 11v_1^2\omega_1\omega_2^2 - 14v_1^2\omega_2^2 + 6\omega_2^2 + 2c_s^2\omega_1\omega_2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 6v_1^2\omega_1\omega_2$

$C_7 = v_2^2\omega_1^2 + 6c_s^2\omega_1^2 - 2\omega_1^2 + 4\omega_1\omega_2 - 2v_2^2\omega_1\omega_2 + v_1^2\omega_1^2 + v_1^2\omega_2^2 - 2\omega_2^2 - 12c_s^2\omega_1\omega_2 + 6c_s^2\omega_2^2 + v_2^2\omega_2^2 - 2v_1^2\omega_1\omega_2$

$C_8 = -4\omega_4\omega_1^2\omega_3 - 9c_s^2\omega_1^2\omega_2^2\omega_3 + \omega_4\omega_1^2\omega_2\omega_3 - 6\omega_4 c_s^2\omega_1^2\omega_2 - \omega_4\omega_1\omega_2^2\omega_3 + 4\omega_4\omega_1\omega_2^2 + 6v_1^2\omega_4\omega_1^2\omega_3 + 3\omega_4 c_s^2\omega_1\omega_2^2\omega_3 - 4\omega_4 v_2^2\omega_1\omega_2^2 + 6v_2^2\omega_1\omega_2^2\omega_3 - 4\omega_4 c_s^2\omega_2^2\omega_3 + 9\omega_4 c_s^2\omega_1^2\omega_2^2 + 2\omega_4 v_2^2\omega_1^2\omega_3 - 3\omega_4 c_s^2\omega_1^2\omega_2\omega_3 - 6\omega_1\omega_2^2\omega_3 - 12\omega_4 c_s^2\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_4 c_s^2\omega_1\omega_2\omega_3 - 3v_2^2\omega_1^2\omega_2^2\omega_3 - 2\omega_4 v_2^2\omega_2^2\omega_3 + 3\omega_4 v_2^2\omega_1^2\omega_2^2 + 8\omega_4 c_s^2\omega_1^2\omega_3 + 3\omega_1^2\omega_2^2\omega_3 - 12v_1^2\omega_4\omega_1\omega_2\omega_3 + 18c_s^2\omega_1\omega_2^2\omega_3 - 2\omega_4 v_2^2\omega_1^2\omega_2 - \omega_4 v_2^2\omega_1^2\omega_2\omega_3 - 3\omega_4\omega_1^2\omega_2^2 + 4\omega_4\omega_1\omega_2\omega_3 + \omega_4 v_2^2\omega_1\omega_2^2\omega_3 + 6v_1^2\omega_4\omega_2^2\omega_3$

$C_9 = -4v_1^2\omega_4\omega_1\omega_2^2 - 12\omega_4 v_2^2\omega_1\omega_2\omega_3 - 4\omega_4\omega_1^2\omega_3 - 9c_s^2\omega_1^2\omega_2^2\omega_3 + \omega_4\omega_1^2\omega_2\omega_3 - 6\omega_4 c_s^2\omega_1^2\omega_2 - \omega_4\omega_1\omega_2^2\omega_3 + 4\omega_4\omega_1\omega_2^2 + 2v_1^2\omega_4\omega_1^2\omega_3 + 6v_1^2\omega_1\omega_2^2\omega_3 + 3\omega_4 c_s^2\omega_1\omega_2^2\omega_3 + v_1^2\omega_4\omega_1\omega_2^2\omega_3 - 4\omega_4 c_s^2\omega_2^2\omega_3 + 9\omega_4 c_s^2\omega_1^2\omega_2^2 + 6\omega_4 v_2^2\omega_1^2\omega_3 - 3\omega_4 c_s^2\omega_1^2\omega_2\omega_3 - 6\omega_1\omega_2^2\omega_3 - v_1^2\omega_4\omega_1^2\omega_2\omega_3 - 3v_1^2\omega_1^2\omega_2^2\omega_3 - 12\omega_4 c_s^2\omega_1\omega_2^2 - 2v_1^2\omega_4\omega_1^2\omega_2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_4 c_s^2\omega_1\omega_2\omega_3 + 6\omega_4 v_2^2\omega_2^2\omega_3 + 8\omega_4 c_s^2\omega_1^2\omega_3 + 3\omega_1^2\omega_2^2\omega_3 + 18c_s^2\omega_1\omega_2^2\omega_3 - 3\omega_4\omega_1^2\omega_2^2 + 4\omega_4\omega_1\omega_2\omega_3 + 3v_1^2\omega_4\omega_1^2\omega_2^2 - 2v_1^2\omega_4\omega_2^2\omega_3$

$C_{10} = -18c_s^2v_2^2\omega_2^2 - 3v_2^2\omega_1\omega_2^2 - 2c_s^4\omega_1^2\omega_2 - 14c_s^4\omega_2^2 + 2v_2^4\omega_1\omega_2 - 15c_s^2v_2^2\omega_1^2\omega_2 - 2v_2^2\omega_1^2 - 2c_s^2\omega_1^2 + 2c_s^2\omega_1^2\omega_2 + 3v_2^4\omega_1\omega_2^2 - 2v_2^2\omega_1\omega_2 - c_s^4\omega_1^2\omega_2^2 - 4v_2^4\omega_2^2 + 3v_2^2\omega_1^2\omega_2 + 14c_s^4\omega_1\omega_2^2 + 2v_2^4\omega_1^2 + 15c_s^2v_2^2\omega_1\omega_2^2 + 2c_s^2\omega_2^2 - 2c_s^2\omega_1\omega_2^2 - 3v_2^4\omega_1^2\omega_2 + 4v_2^2\omega_2^2 + 6c_s^2v_2^2\omega_1\omega_2 + 12c_s^2v_2^2\omega_1^2 + 2c_s^4\omega_1^2$

$C_{11} = -5\omega_1\omega_2^2 + 11v_2^2\omega_1\omega_2^2 + 8v_2^2\omega_1^2 + 8c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 - 2\omega_1\omega_2 + 6v_2^2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 11v_2^2\omega_1^2\omega_2 + 6\omega_2^2 + 2c_s^2\omega_1\omega_2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 14v_2^2\omega_2^2$

$C_{12} = 2v_3^2\omega_2^2 - 3\omega_1\omega_2^2 - 3v_1^2\omega_1^2\omega_2 + 12c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1^2v_3^2 + 2\omega_1\omega_2 + 2v_1^2\omega_1^2 + 3\omega_1^2\omega_2 + 3v_1^2\omega_1\omega_2^2 - 4v_1^2\omega_2^2 + 2\omega_2^2 - 6c_s^2\omega_1\omega_2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 4\omega_1 v_3^2\omega_2 + 2v_1^2\omega_1\omega_2$

$C_{13} = 8\omega_4 v_3^2\omega_2^2\omega_3 - 8\omega_4\omega_1^2\omega_3 + 6\omega_4\omega_1^2v_3^2\omega_2^2 + 18c_s^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 - 12\omega_4 c_s^2\omega_1^2\omega_2 - 8\omega_4\omega_1\omega_2^2\omega_3 + 8\omega_4\omega_1\omega_2^2 + 12v_1^2\omega_4\omega_1^2\omega_3 - 3\omega_4\omega_1^2v_3^2\omega_2^2\omega_3 + 12\omega_4 c_s^2\omega_1\omega_2^2\omega_3 + 18v_1^2\omega_4\omega_1\omega_2^2\omega_3 - 12\omega_1 v_3^2\omega_2^2\omega_3 + 16\omega_4 c_s^2\omega_2^2\omega_3 + 18\omega_4 c_s^2\omega_1^2\omega_2^2 - 12\omega_4 c_s^2\omega_1^2\omega_2\omega_3 + 12\omega_1\omega_2^2\omega_3 - 18v_1^2\omega_4\omega_1^2\omega_2\omega_3 - 4\omega_4\omega_1^2v_3^2\omega_2 - 11\omega_4 c_s^2\omega_1^2\omega_2^2\omega_3 - 24\omega_4 c_s^2\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 4\omega_4 c_s^2\omega_1\omega_2\omega_3 - 2\omega_4\omega_1^2v_3^2\omega_2\omega_3 + 16\omega_4 c_s^2\omega_1^2\omega_3 - 6\omega_1^2\omega_2^2\omega_3 + 12v_1^2\omega_4\omega_1\omega_2\omega_3 - 36c_s^2\omega_1\omega_2^2\omega_3 - 8\omega_4\omega_1 v_3^2\omega_2^2 + 6\omega_1^2v_3^2\omega_2^2\omega_3 - 6\omega_4\omega_1^2\omega_2^2 - 4\omega_4\omega_1\omega_2\omega_3 + 2\omega_4\omega_1 v_3^2\omega_2^2\omega_3 + 4\omega_4\omega_1^2v_3^2\omega_3 - 24v_1^2\omega_4\omega_2^2\omega_3 + 3\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{14} = -2\omega_1\omega_2^2 - 2v_1^2\omega_1^2\omega_2 - 4\omega_1^2\omega_3 - 4c_s^2\omega_2^2\omega_3 - 4c_s^2\omega_1\omega_2\omega_3 + 6v_3^2\omega_2^2\omega_3 + v_1^2\omega_1\omega_2^2\omega_3 - 6c_s^2\omega_1^2\omega_2 + \omega_1^2\omega_2\omega_3 - 2v_1^2\omega_2^2\omega_3 - v_1^2\omega_1^2\omega_2\omega_3 - \omega_1\omega_2^2\omega_3 + 2\omega_1^2\omega_2 + 2v_1^2\omega_1\omega_2^2 + 4\omega_1\omega_2\omega_3 + 6\omega_1^2v_3^2\omega_3 + 2v_1^2\omega_1^2\omega_3 - 12\omega_1 v_3^2\omega_2\omega_3 + 3c_s^2\omega_1\omega_2^2\omega_3 + 6c_s^2\omega_1\omega_2^2 - 3c_s^2\omega_1^2\omega_2\omega_3 + 8c_s^2\omega_1^2\omega_3$

$C_{15} = 2v_3^2\omega_2^2 - 3\omega_1\omega_2^2 + 3v_2^2\omega_1\omega_2^2 + 2v_2^2\omega_1^2 + 12c_s^2\omega_1^2 - 4\omega_1^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1^2v_3^2 + 2\omega_1\omega_2 + 2v_2^2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 3v_2^2\omega_1^2\omega_2 + 2\omega_2^2 - 6c_s^2\omega_1\omega_2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 4v_2^2\omega_2^2 - 4\omega_1 v_3^2\omega_2$

$C_{16} = 12\omega_4 v_2^2\omega_1\omega_2\omega_3 + 8\omega_4 v_3^2\omega_2^2\omega_3 - 8\omega_4\omega_1^2\omega_3 + 6\omega_4\omega_1^2v_3^2\omega_2^2 + 18c_s^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 - 12\omega_4 c_s^2\omega_1^2\omega_2 - 8\omega_4\omega_1\omega_2^2\omega_3 + 8\omega_4\omega_1\omega_2^2 - 3\omega_4\omega_1^2v_3^2\omega_2^2\omega_3 + 12\omega_4 c_s^2\omega_1\omega_2^2\omega_3 - 12\omega_1 v_3^2\omega_2^2\omega_3 + 16\omega_4 c_s^2\omega_2^2\omega_3 + 18\omega_4 c_s^2\omega_1^2\omega_2^2 + 12\omega_4 v_2^2\omega_1^2\omega_3 - 12\omega_4 c_s^2\omega_1^2\omega_2\omega_3 + 12\omega_1\omega_2^2\omega_3 - 4\omega_4\omega_1^2v_3^2\omega_2 - 11\omega_4 c_s^2\omega_1^2\omega_2^2\omega_3 - 24\omega_4 c_s^2\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 4\omega_4 c_s^2\omega_1\omega_2\omega_3 - 2\omega_4\omega_1^2v_3^2\omega_2\omega_3 - 24\omega_4 v_2^2\omega_2^2\omega_3 + 16\omega_4 c_s^2\omega_1^2\omega_3 - 6\omega_1^2\omega_2^2\omega_3 - 36c_s^2\omega_1\omega_2^2\omega_3 - 8\omega_4\omega_1 v_3^2\omega_2^2 + 6\omega_1^2v_3^2\omega_2^2\omega_3 - 18\omega_4 v_2^2\omega_1^2\omega_2\omega_3 - 6\omega_4\omega_1^2\omega_2^2 - 4\omega_4\omega_1\omega_2\omega_3 + 2\omega_4\omega_1 v_3^2\omega_2^2\omega_3 + 4\omega_4\omega_1^2v_3^2\omega_3 + 18\omega_4 v_2^2\omega_1\omega_2^2\omega_3 + 3\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{17} = -2\omega_1\omega_2^2 + 2v_2^2\omega_1\omega_2^2 - 4\omega_1^2\omega_3 - 4c_s^2\omega_2^2\omega_3 - 4c_s^2\omega_1\omega_2\omega_3 + 2v_2^2\omega_1^2\omega_3 + 6v_3^2\omega_2^2\omega_3 - v_2^2\omega_1^2\omega_2\omega_3 - 6c_s^2\omega_1^2\omega_2 + \omega_1^2\omega_2\omega_3 + v_2^2\omega_1\omega_2^2\omega_3 - \omega_1\omega_2^2\omega_3 + 2\omega_1^2\omega_2 - 2v_2^2\omega_1^2\omega_2 + 4\omega_1\omega_2\omega_3 + 6\omega_1^2v_3^2\omega_3 - 12\omega_1 v_3^2\omega_2\omega_3 + 3c_s^2\omega_1\omega_2^2\omega_3 + 6c_s^2\omega_1\omega_2^2 - 3c_s^2\omega_1^2\omega_2\omega_3 - 2v_2^2\omega_2^2\omega_3 + 8c_s^2\omega_1^2\omega_3$

$C_{18} = -16v_3^2\omega_2^2 - 4c_s^4\omega_1^2\omega_2 + 8c_s^4\omega_2^2 - 24\omega_1 v_3^4\omega_2^2 - c_s^2\omega_1^2\omega_2^2 - 96c_s^2\omega_1 v_3^2\omega_2^2 + 12\omega_1^2v_3^2\omega_2 + 48c_s^2\omega_1 v_3^2\omega_2 - 7\omega_1^2v_3^2\omega_2^2 - 4c_s^2\omega_1^2 + 16\omega_1 v_3^4\omega_2 + 4c_s^2\omega_1^2\omega_2 - 4\omega_1^2v_3^2 + c_s^4\omega_1^2\omega_2^2 + 24\omega_1 v_3^2\omega_2^2 - 8c_s^4\omega_1\omega_2^2 - 48c_s^2\omega_1^2v_3^2\omega_2 - 12\omega_1^2v_3^4\omega_2 + 16v_3^4\omega_2^2 + 4\omega_1^2v_3^4 + 24c_s^2\omega_1^2v_3^2 - 8c_s^2\omega_2^2 + 8c_s^2\omega_1\omega_2^2 + 72c_s^2v_3^2\omega_2^2 + 7\omega_1^2v_3^4\omega_2^2 - 16\omega_1 v_3^2\omega_2 + 4c_s^4\omega_1^2 + 24c_s^2\omega_1^2v_3^2\omega_2^2$

$C_{19} = 28v_3^2\omega_2^2 + 16\omega_1\omega_2^2 + 5c_s^2\omega_1^2\omega_2^2 - 20\omega_1^2v_3^2\omega_2 + 11\omega_1^2v_3^2\omega_2^2 + 8c_s^2\omega_1^2 - 4\omega_1^2 - 12c_s^2\omega_1^2\omega_2 + 8\omega_1^2v_3^2 - 8\omega_1\omega_2 + 8\omega_1^2\omega_2 - 40\omega_1 v_3^2\omega_2^2 - 12\omega_2^2 + 8c_s^2\omega_1\omega_2 + 20c_s^2\omega_2^2 - 24c_s^2\omega_1\omega_2^2 + 24\omega_1 v_3^2\omega_2 - 4\omega_1^2\omega_2^2$

$C_{20} = -6v_1^2\omega_1 - 2c_s^2\omega_1 + 12v_1^4\omega_2 + 48v_1^2c_s^2\omega_2 + 4c_s^4\omega_2 + 2c_s^4\omega_1 - 36v_1^2c_s^2\omega_1\omega_2 + 6v_1^4\omega_1 + 24v_1^2c_s^2\omega_1 - 9v_1^4\omega_1\omega_2 + 3c_s^2\omega_1\omega_2 - 4c_s^2\omega_2 - 12v_1^2\omega_2 - 3c_s^4\omega_1\omega_2 + 9v_1^2\omega_1\omega_2$

$C_{21} = -12v_1^4\omega_4^2\omega_1^2\omega_3^2 + \omega_4^2c_s^2\omega_1^3\omega_3^2 - 36v_1^2\omega_4^2c_s^2\omega_1^3\omega_3 + 24\omega_4^2c_s^4\omega_1^2\omega_3^2 + 15v_1^2\omega_4\omega_1^3\omega_3^2 + 12\omega_4^2c_s^2\omega_1^2\omega_3 - 15v_1^4\omega_4^2\omega_1^3\omega_3 - 12\omega_4 c_s^2\omega_1\omega_3^2 + 36v_1^2\omega_4\omega_1^2\omega_3 - 12v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2 + 3\omega_4^2c_s^4\omega_1^3\omega_3 - 36v_1^2\omega_4\omega_1^2\omega_3^2 + 36v_1^2\omega_4 c_s^2\omega_1\omega_3^2 + 72v_1^2\omega_4^2c_s^2\omega_1^2\omega_3 - 3\omega_4^2c_s^4\omega_1^3\omega_3^2 + 24\omega_4^2c_s^4\omega_3^2 - 8\omega_4^2c_s^2\omega_1^2\omega_3^2 + 3v_1^4\omega_4^2\omega_1^3\omega_3^2 + 6v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 - 12\omega_4^2c_s^4\omega_1^2\omega_3 + 12\omega_4 c_s^4\omega_1\omega_3^2 - 18v_1^2\omega_4\omega_1^3\omega_3 + 36v_1^4\omega_4^2\omega_1^2\omega_3 - 3\omega_4^2c_s^2\omega_1^3\omega_3 + 12\omega_4^2c_s^4\omega_1\omega_3 - 54v_1^2\omega_4^2c_s^2\omega_1^2 + 54v_1^2\omega_4 c_s^2\omega_1^3\omega_3 + 12v_1^2\omega_4^2\omega_1^2\omega_3^2 - 18v_1^4\omega_1^2\omega_3^2 - 12\omega_4 c_s^4\omega_1^2\omega_3^2 - 9v_1^2\omega_1^3\omega_3^2 - 3\omega_4 c_s^2\omega_1^3\omega_3^2 - 18v_1^4\omega_4^2\omega_1^2 - 15v_1^4\omega_4\omega_1^3\omega_3^2 + 72v_1^2\omega_4 c_s^2\omega_1^2\omega_3^2 +$

$15v_1^2\omega_4^2\omega_1^3\omega_3 + 27v_1^2\omega_4^2c_s^2\omega_1^3 + 36v_1^2\omega_4^2c_s^2\omega_1\omega_3 + 12\omega_4^2c_s^2\omega_1\omega_3^2 + 9v_1^4\omega_4^2\omega_1^3 - 54v_1^2c_s^2\omega_1^2\omega_3^2 - 36v_1^4\omega_4\omega_1^2\omega_3 - 12\omega_4^2c_s^2\omega_1\omega_3 + 12\omega_4c_s^2\omega_1^2\omega_3^2 + 18v_1^2\omega_4^2\omega_3^2 + 36v_1^4\omega_4\omega_4^2\omega_3^2 + 18v_1^2\omega_4^2\omega_1^2 - 108v_1^2\omega_4c_s^2\omega_1^2\omega_3 - 3v_1^2\omega_4^2\omega_1^3\omega_3^2 + 3\omega_4c_s^4\omega_1^3\omega_3^2 + 9v_1^4\omega_1^3\omega_3^2 - 36v_1^2\omega_4^2c_s^2\omega_1\omega_3^2 + 18v_1^4\omega_4\omega_1^3\omega_3 + 27v_1^2c_s^2\omega_1^3\omega_3^2 - 48\omega_4^2c_s^4\omega_1\omega_3^2 - 36v_1^2\omega_4c_s^2\omega_1^3\omega_3^2 - 36v_1^2\omega_4^2\omega_1^2\omega_3 - 9v_1^2\omega_4^2\omega_1^3$

$C_{22} = 4v_1^2\omega_4\omega_2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 - 18\omega_4v_2^2\omega_2\omega_3 + 12\omega_4c_s^2\omega_1\omega_3 - 9v_1^2\omega_4\omega_1\omega_2 + 6\omega_4c_s^2\omega_2\omega_3 + 18\omega_4v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4c_s^2\omega_1\omega_2\omega_3 - 9v_1^2\omega_1\omega_2\omega_3 + 6v_1^2\omega_4\omega_1\omega_2\omega_3 + 2v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{23} = 12v_1^2\omega_4\omega_3 - 2\omega_4^2v_2^2\omega_1\omega_3 + 2\omega_4^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_1\omega_3^2 + 3v_1^2\omega_1\omega_3^2 - 6\omega_4^2\omega_1 - 6v_1^2\omega_3^2 - 18\omega_4c_s^2\omega_3^2 + 36\omega_4c_s^2\omega_3 - 6\omega_4v_2^2\omega_3^2 - 6\omega_4^2v_2^2 - 6v_1^2\omega_4^2 - 18\omega_4c_s^2\omega_1\omega_3 - 36\omega_4^2c_s^2 + 12\omega_4^2 + 6v_2^2\omega_3^2 - 6\omega_4^2\omega_3 + 18\omega_4^2c_s^2\omega_3 - 12\omega_4\omega_3 - 2\omega_4\omega_1\omega_3^2 + 3v_1^2\omega_4^2\omega_1 + 3\omega_4^2v_2^2\omega_1 - 3v_2^2\omega_1\omega_3^2 - 6\omega_4^2c_s^2\omega_1\omega_3 + 18\omega_4^2c_s^2\omega_1 - 6v_1^2\omega_4\omega_1\omega_3 + 6\omega_4\omega_3^2 + 6\omega_4\omega_1\omega_3 + 6\omega_4^2v_2^2\omega_3 + 2\omega_4v_2^2\omega_1\omega_3^2$

$C_{24} = -6v_1^2\omega_4c_s^2\omega_1^2\omega_5\omega_3^2 - 3\omega_4^2v_2^4\omega_1^3\omega_5\omega_3 + 32\omega_4^2c_s^4\omega_1^2\omega_3^2 - 8\omega_4^2c_s^4\omega_1^2\omega_5\omega_3 + 8\omega_4c_s^2\omega_1\omega_5\omega_3^2 - 9c_s^2v_2^2\omega_1^3\omega_5\omega_3^2 - 6v_1^2\omega_4^2\omega_1^2\omega_5\omega_3 - 2\omega_4^2c_s^2\omega_1^3\omega_5\omega_3 + 3\omega_4^2v_2^4\omega_1^3\omega_5 + 6\omega_4c_s^2v_2^2\omega_1^3\omega_5\omega_3^2 - 6\omega_4^2v_2^2\omega_1^2\omega_5\omega_3 + 6v_1^4\omega_4^2\omega_1^2\omega_5\omega_3 + 6\omega_4^2v_2^2\omega_1^2\omega_5 - 6\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_3 + 18v_1^2c_s^2\omega_1^2\omega_5\omega_3^2 + 6v_1^2\omega_4^2\omega_1^2\omega_5 + 3v_2^2\omega_1^3\omega_5\omega_3^2 + 12\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_3 + 6v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_3 - 8\omega_4^2c_s^4\omega_1^3\omega_3^2 + 3\omega_4v_2^4\omega_1^3\omega_5\omega_3^2 - 12\omega_4c_s^2v_2^2\omega_1\omega_5\omega_3^2 + 6v_1^4\omega_1^2\omega_5\omega_3^2 + 8\omega_4c_s^4\omega_1^2\omega_5\omega_3^2 - 8\omega_4^2c_s^2\omega_1\omega_5\omega_3 + 3v_1^2\omega_1^3\omega_5\omega_3^2 - 3v_1^2\omega_4^2\omega_1^3\omega_5 + 2\omega_4c_s^2\omega_1^3\omega_5\omega_3^2 - 3\omega_4^2v_2^2\omega_1^3\omega_5 + 3v_1^4\omega_4\omega_1^3\omega_5\omega_3^2 + 6\omega_4v_2^2\omega_1^2\omega_5\omega_3^2 - 6\omega_4^2v_2^4\omega_1^2\omega_5 - 3v_1^2\omega_4\omega_1^3\omega_5\omega_3^2 + 6v_2^4\omega_1^2\omega_5\omega_3^2 - 3v_1^4\omega_4^2\omega_1^3\omega_5\omega_3 + 3\omega_4^2v_2^2\omega_1^3\omega_5\omega_3 + 12v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_3 - 9v_1^2c_s^2\omega_1^3\omega_5\omega_3^2 + 6\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_3 - 18v_1^2\omega_4^2c_s^2\omega_1^2\omega_5 + 8\omega_4^2c_s^2\omega_1^2\omega_5\omega_3 + 3v_1^2\omega_4^2\omega_1^3\omega_5\omega_3 + 18c_s^2v_2^2\omega_1^2\omega_5\omega_3^2 - 8\omega_4c_s^4\omega_1\omega_5\omega_3^2 - 6\omega_4c_s^2v_2^2\omega_1^2\omega_5\omega_3^2 - 8\omega_4^2c_s^4\omega_1\omega_5\omega_3^2 + 2\omega_4^2c_s^4\omega_1^3\omega_5\omega_3 + 9\omega_4^2c_s^2v_2^2\omega_1^3\omega_5 + 6v_1^2\omega_4c_s^2\omega_1^3\omega_5\omega_3^2 - 6v_1^4\omega_4^2\omega_1^2\omega_5 + 6\omega_4^2v_2^4\omega_1^2\omega_5\omega_3 - 3\omega_4v_2^2\omega_1^3\omega_5\omega_3^2 - 3v_2^4\omega_1^3\omega_5\omega_3^2 - 12v_1^2\omega_4c_s^2\omega_1\omega_5\omega_3^2 + 6v_1^2\omega_4\omega_1^2\omega_5\omega_3^2 - 8\omega_4c_s^2\omega_1^2\omega_5\omega_3^2 - 6v_1^2\omega_1^2\omega_5\omega_3^2 + 9v_1^2\omega_4^2c_s^2\omega_1^3\omega_5 + 8\omega_4^2c_s^4\omega_1\omega_5\omega_3 - 6v_1^4\omega_4\omega_1^2\omega_5\omega_3^2 + 16\omega_4^2c_s^4\omega_5\omega_3^2 - 18\omega_4^2c_s^2v_2^2\omega_1^2\omega_5 - 2\omega_4c_s^4\omega_1^3\omega_5\omega_3^2 + 3v_1^4\omega_4^2\omega_1^3\omega_5 - 3v_1^4\omega_1^3\omega_5\omega_3^2 - 32\omega_4^2c_s^4\omega_1\omega_3^2 - 6v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_3 - 6v_2^2\omega_1^2\omega_5\omega_3^2 - 6\omega_4v_2^4\omega_1^2\omega_5\omega_3^2$

$C_{25} = 6\omega_4v_2^2\omega_1\omega_2\omega_3 - 18v_1^2\omega_4\omega_2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 - 9\omega_4v_2^2\omega_1\omega_2 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 4\omega_4v_2^2\omega_2\omega_3 + 12\omega_4c_s^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_2\omega_3 - 9v_2^2\omega_1\omega_2\omega_3 + 2\omega_4v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4c_s^2\omega_1\omega_2\omega_3 + 18v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{26} = -2v_1^2\omega_4^2\omega_1\omega_3 + 12\omega_4v_2^2\omega_3 + 2\omega_4^2\omega_1\omega_3 + 6\omega_4c_s^2\omega_1\omega_3^2 - 3v_1^2\omega_1\omega_3^2 - 6\omega_4^2\omega_1 + 6v_1^2\omega_3^2 - 18\omega_4c_s^2\omega_3^2 + 36\omega_4c_s^2\omega_3 - 6\omega_4^2v_2^2 - 6v_1^2\omega_4^2 - 18\omega_4c_s^2\omega_1\omega_3 - 36\omega_4^2c_s^2 + 12\omega_4^2 - 6v_2^2\omega_3^2 - 6\omega_4^2\omega_3 - 6v_1^2\omega_4\omega_3^2 + 18\omega_4^2c_s^2\omega_3 - 6\omega_4v_2^2\omega_1\omega_3 - 12\omega_4\omega_3 - 2\omega_4\omega_1\omega_3^2 + 3v_1^2\omega_4^2\omega_1 + 2v_1^2\omega_4\omega_1\omega_3^2 + 3\omega_4^2v_2^2\omega_1 + 3v_2^2\omega_1\omega_3^2 - 6\omega_4^2c_s^2\omega_1\omega_3 + 18\omega_4^2c_s^2\omega_1 + 6\omega_4\omega_3^2 + 6\omega_4\omega_1\omega_3 + 6v_1^2\omega_4^2\omega_3$

$C_{27} = 12v_2^4\omega_2 - 2c_s^2\omega_1 - 9v_2^4\omega_1\omega_2 - 6v_2^2\omega_1 + 4c_s^4\omega_2 + 9v_2^2\omega_1\omega_2 + 48c_s^2v_2^2\omega_2 + 2c_s^4\omega_1 + 24c_s^2v_2^2\omega_1 - 12v_2^2\omega_2 + 3c_s^2\omega_1\omega_2 - 4c_s^2\omega_2 - 36c_s^2v_2^2\omega_1\omega_2 + 6v_2^4\omega_1 - 3c_s^4\omega_1\omega_2$

$C_{28} = -9v_2^2\omega_1^3\omega_3^2 - 15\omega_4v_2^4\omega_1^3\omega_3^2 + 6\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 + \omega_4^2c_s^2\omega_1^3\omega_3^2 + 24\omega_4^2c_s^4\omega_1^2\omega_3^2 + 27\omega_4^2c_s^2v_2^2\omega_1^3 - 36\omega_4v_2^2\omega_1^2\omega_3^2 - 18v_2^4\omega_1^2\omega_3^2 - 108\omega_4c_s^2v_2^2\omega_1^2\omega_3 + 12\omega_4^2c_s^2\omega_1^2\omega_3 - 36\omega_4v_2^4\omega_1^2\omega_3 - 12\omega_4c_s^2\omega_1\omega_3^2 + 72\omega_4^2c_s^2v_2^2\omega_1^2\omega_3 - 18\omega_4v_2^2\omega_1^3\omega_3 - 36\omega_4c_s^2v_2^2\omega_1^3\omega_3^2 - 54\omega_4^2c_s^2v_2^2\omega_1^2 + 3\omega_4^2c_s^4\omega_1^3\omega_3 + 15\omega_4v_2^2\omega_1^3\omega_3^2 + 54\omega_4c_s^2v_2^2\omega_1^3\omega_3 + 9v_2^4\omega_1^3\omega_3^2 - 3\omega_4^2c_s^4\omega_1^3\omega_3^2 + 24\omega_4^2c_s^4\omega_3^2 - 8\omega_4^2c_s^2\omega_1^2\omega_3^2 + 18v_2^2\omega_1^2\omega_3^2 + 9\omega_4^2v_2^4\omega_1^3 - 12\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2 + 36\omega_4v_2^2\omega_1^4\omega_3^2 - 12\omega_4^2c_s^4\omega_1^2\omega_3 + 12\omega_4c_s^4\omega_1\omega_3^2 + 36\omega_4v_2^2\omega_1^2\omega_3 + 72\omega_4c_s^2v_2^2\omega_1^2\omega_3^2 - 36\omega_4^2c_s^2v_2^2\omega_1^3\omega_3 - 18\omega_4^2v_2^4\omega_1^2 + 18\omega_4v_2^4\omega_1^3\omega_3 - 3\omega_4^2c_s^2\omega_1^3\omega_3 + 12\omega_4^2c_s^4\omega_1\omega_3 + 12\omega_4^2v_2^2\omega_1^2\omega_3^2 + 36\omega_4c_s^2v_2^2\omega_1\omega_3^2 - 12\omega_4c_s^4\omega_1^2\omega_3^2 - 3\omega_4c_s^2\omega_1^3\omega_3^2 + 3\omega_4^2v_2^4\omega_1^3\omega_3^2 + 15\omega_4^2v_2^2\omega_1^3\omega_3 + 27c_s^2v_2^2\omega_1^3\omega_3^2 + 36\omega_4^2v_2^4\omega_1^2\omega_3 + 12\omega_4^2c_s^2\omega_1\omega_3^2 - 36\omega_4^2c_s^2v_2^2\omega_1\omega_3^2 - 12\omega_4^2v_2^4\omega_1^2\omega_3^2 - 12\omega_4^2c_s^2\omega_1\omega_3 + 36\omega_4^2c_s^2v_2^2\omega_1\omega_3 + 12\omega_4c_s^2\omega_1^2\omega_3^2 + 3\omega_4c_s^4\omega_1^3\omega_3^2 + 18\omega_4^2v_2^2\omega_1^2 - 3\omega_4^2v_2^2\omega_1^3\omega_3^2 - 54c_s^2v_2^2\omega_1^2\omega_3^2 - 15\omega_4^2v_2^4\omega_1^3\omega_3 - 48\omega_4^2c_s^4\omega_1\omega_3^2 - 36\omega_4^2v_2^2\omega_1^2\omega_3 - 9\omega_4^2v_2^2\omega_1^3$

$C_{29} = 56\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 - 104\omega_4^2c_s^2\omega_1^3\omega_3^2 + 160v_1^2\omega_4^2\omega_2^3\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 276\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 9\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2 + 54c_s^4\omega_1^3\omega_3^2\omega_3^2 - 342\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 - 6\omega_4^2\omega_1^2v_3^4\omega_2^3\omega_3^2 - 412v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 92v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 36c_s^2\omega_1^2\omega_2^3\omega_3^2 - 6\omega_4^2c_s^2\omega_1^3\omega_3^3\omega_3^2 + 108\omega_4c_s^4\omega_1^2\omega_3^3\omega_3^2 + 6\omega_4^2\omega_1^3v_3^4\omega_2^2\omega_3^2 - 88\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 152v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 + 120\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 - 78v_1^4\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 72v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 - 132v_1^4\omega_4^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2\omega_2^3\omega_3^2 + 16v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 12\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 20\omega_4^2\omega_1^3\omega_2\omega_3^2 - 460v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 144\omega_4^2c_s^4\omega_1^3\omega_3^2 - 712v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 14\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 36v_1^2c_s^2\omega_1^2\omega_2^3\omega_3^2 + 9\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 + 6\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3^2 + 48v_1^4\omega_4^2\omega_1^3\omega_3^2 - 368\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 48\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 320v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 - 96v_1^4\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 216\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 + 40v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 6\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2 + 36v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 - 118\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 104v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 28\omega_4^2\omega_1\omega_2^3\omega_3^2 - 9v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 - 144v_1^4\omega_4^2\omega_2^3\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2 + 1232v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 - 144\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 + 120v_1^4\omega_4^2\omega_1^2\omega_2\omega_3^2 + 184\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3^2 - 288\omega_4^2c_s^4\omega_2^3\omega_3^2 - 18c_s^2\omega_1^3\omega_2^3\omega_3^2 - 108\omega_4^2c_s^4\omega_1^2\omega_2^3 - 136v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 208\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 27\omega_4c_s^4\omega_1^3\omega_2^3\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 + 14\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 24v_1^4\omega_4^2\omega_1\omega_2^2\omega_3^2 - 168\omega_4^2c_s^4\omega_1\omega_2^3\omega_3 + 72\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2 + 394v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 18\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3^2 - 108c_s^4\omega_1^2\omega_2^3\omega_3^2 + 32v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 - 36v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 784v_1^2\omega_4^2c_s^2\omega_2^3\omega_3^2 - 9v_1^2\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2 + 54\omega_4^2c_s^4\omega_1^3\omega_3^2 - 92v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 + 52\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 56v_1^2\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 18\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 56v_1^2\omega_4^2\omega_1^3\omega_3^2 + 208\omega_4^2c_s^2\omega_2^3\omega_3^2 + 588\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 - 36v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 8\omega_4^2\omega_1\omega_2^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^2\omega_3^2 + 78v_1^4\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 27\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3 - 72\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3 + 8\omega_4^2\omega_1^3\omega_3^2 - 18\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2 - 256v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 - 16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 18v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 6v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2 + 16\omega_4^2\omega_1^2\omega_2\omega_3^2 + 144\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 + 18v_1^2c_s^2\omega_1^3\omega_2^3\omega_3^2 - 56v_1^2\omega_4^2c_s^2\omega_1\omega_3^2\omega_3 + 448v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 228v_1^4\omega_4^2\omega_1\omega_2^3\omega_3^2$

$C_{30} = 10\omega_4c_s^4\omega_1^2\omega_2^2\omega_3 - 18\omega_4c_s^4\omega_1^2\omega_2^3 + 60v_1^2\omega_4c_s^2\omega_1^2\omega_2^2 - 222v_1^2\omega_4\omega_1\omega_2^3\omega_3 + 8\omega_4c_s^4\omega_1^3\omega_2 - 153v_1^2\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 - 288v_1^2\omega_4c_s^2\omega_1^3\omega_2\omega_3 + 36c_s^4\omega_1\omega_2^3\omega_3 + 408v_1^4\omega_4\omega_1\omega_2^3\omega_3 + \omega_4\omega_1^2v_3^2\omega_2^3\omega_3 + 8\omega_4\omega_1^2\omega_2\omega_3 - 54\omega_4c_s^2\omega_1\omega_2^3\omega_3 - 9\omega_4c_s^2\omega_1^3\omega_2^2 - 81v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 + 24v_1^2\omega_4c_s^2\omega_1^3\omega_2 + 20\omega_4c_s^4\omega_1^2\omega_2^2 - \omega_4\omega_1^3v_3^2\omega_2^2\omega_3 - 54v_1^2\omega_4c_s^2\omega_1^2\omega_2^3 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 4\omega_4\omega_1\omega_2^2\omega_3 + 138v_1^4\omega_4\omega_1^3\omega_2^2\omega_3 - 264v_1^4\omega_4\omega_2^3\omega_3 - 24\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 - 108v_1^2c_s^2\omega_1^2\omega_2^3\omega_3 + 40\omega_4c_s^2\omega_2^3\omega_3 - 8\omega_4c_s^2\omega_1^3\omega_2 + 18\omega_4c_s^2\omega_1^2\omega_2^3 + 32\omega_4c_s^2\omega_1\omega_2^2\omega_3 + 7\omega_4\omega_1^3\omega_2^2\omega_3 - 24v_1^4\omega_4\omega_1\omega_2^2\omega_3 - 32\omega_4c_s^4\omega_1^3\omega_2\omega_3 - 312v_1^2\omega_4c_s^2\omega_2^3\omega_3 + 36c_s^2\omega_1^2\omega_2^3\omega_3 + 12v_1^2\omega_4\omega_1\omega_2^2\omega_3 + 4\omega_4\omega_1^3\omega_3 - 54v_1^2\omega_4c_s^2\omega_1^3\omega_2^2 + 9\omega_4c_s^4\omega_1^3\omega_2^3 - 29\omega_4c_s^4\omega_1^2\omega_2^3\omega_3 - 90v_1^2\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 - \omega_4\omega_1^2v_3^4\omega_2^3\omega_3 + 192v_1^4\omega_4\omega_1^2\omega_2\omega_3 + 14\omega_4\omega_1\omega_2^3\omega_3 - 20\omega_4c_s^2\omega_1^2\omega_2^2 + 9c_s^4\omega_1^3\omega_2^3\omega_3 + \omega_4\omega_1^3v_3^4\omega_2^2\omega_3 - 60v_1^2\omega_4\omega_1^3\omega_3 - 16\omega_4c_s^2\omega_1^2\omega_2\omega_3 - 96v_1^2\omega_4\omega_1^2\omega_2\omega_3 + 27v_1^2\omega_4c_s^2\omega_1^3\omega_2^3 - 18\omega_4c_s^4\omega_1^3\omega_2^2 - 68\omega_4c_s^4\omega_2^3\omega_3 - 168v_1^4\omega_4\omega_1^2\omega_2^2\omega_3 - 8\omega_4\omega_2^3\omega_3 + 144v_1^2\omega_4c_s^2\omega_1^3\omega_3 + 27v_1^2c_s^2\omega_1^3\omega_2^3\omega_3 - 6\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 - 60v_1^2\omega_4c_s^2\omega_1\omega_2^2\omega_3 + 84v_1^2\omega_4\omega_1^2\omega_2^2\omega_3 + 94\omega_4c_s^4\omega_1\omega_2^3\omega_3 - 36c_s^2\omega_1\omega_2^3\omega_3 - 8\omega_4c_s^2\omega_1\omega_2^3 - 7\omega_4\omega_1^2\omega_2^3\omega_3 + 16\omega_4c_s^4\omega_1^3\omega_3 - 10\omega_4\omega_1^3\omega_2\omega_3 + 144v_1^2\omega_4\omega_2^3\omega_3 + 17\omega_4c_s^4\omega_1^3\omega_2^2\omega_3 + 120v_1^2\omega_4c_s^2\omega_1^2\omega_2\omega_3 + 138v_1^2\omega_4\omega_1^3\omega_2\omega_3 + 3\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 + 24v_1^2\omega_4c_s^2\omega_1\omega_2^3 + 432v_1^2\omega_4c_s^2\omega_1\omega_2^3\omega_3 - 28\omega_4c_s^4\omega_1\omega_2^2\omega_3 + 81v_1^2\omega_4\omega_1^2\omega_2^3\omega_3 + 24\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 - 240v_1^4\omega_4\omega_1^3\omega_2\omega_3 - 138v_1^4\omega_4\omega_1^2\omega_2^3\omega_3 + 42\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 36c_s^4\omega_1^2\omega_2^3\omega_3 - 9c_s^2\omega_1^3\omega_2^3\omega_3 - 20\omega_4c_s^2\omega_1^3\omega_3 + 96v_1^4\omega_4\omega_1^3\omega_3 + 8\omega_4c_s^4\omega_1^2\omega_2\omega_3 + 8\omega_4c_s^4\omega_1\omega_3^2 + 153v_1^2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 - 3\omega_4c_s^4\omega_1^3\omega_2^3\omega_3 - 3\omega_4c_s^2\omega_1^2v_3^2\omega_2^3\omega_3 + 108v_1^2c_s^2\omega_1\omega_2^3\omega_3 - 4\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{31} = 4v_1^2\omega_4\omega_2\omega_3 + 18\omega_4\omega_1 v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 12\omega_4 c_s^2\omega_1\omega_3 - 9v_1^2\omega_4\omega_1\omega_2 + 6\omega_4 c_s^2\omega_2\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4 c_s^2\omega_1\omega_2\omega_3 - 9v_1^2\omega_1\omega_2\omega_3 + 6v_1^2\omega_4\omega_1\omega_2\omega_3 + 2v_1^2\omega_4\omega_1\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 18\omega_4 v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_{32} = -8\omega_4^2 v_2^2\omega_2^3\omega_3^2 + 128\omega_4^2 c_s^2\omega_1\omega_2^2\omega_3^2 + 32\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_3^2 - 104\omega_4^2 c_s^2\omega_1^3\omega_3^2 - 96v_1^2\omega_4^2\omega_3^3\omega_3^2 - 168\omega_4^2 c_s^4\omega_1^3\omega_2\omega_3^2 + 16\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 27\omega_4 c_s^2\omega_1^3\omega_2^3\omega_3^2 - 56\omega_4^2 c_s^2 v_2^2\omega_1\omega_2^2\omega_3^2 - 162c_s^4\omega_1^3\omega_2^3\omega_3^2 - 30\omega_4^2 c_s^4\omega_1^2\omega_2^3\omega_3^2 + 864v_1^2\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3^2 - 108c_s^2\omega_1^2\omega_2^3\omega_3^2 - 324\omega_4 c_s^4\omega_1^2\omega_2^3\omega_3^2 - 60v_1^2\omega_4^2 v_2^2\omega_1\omega_2^3\omega_3^2 + 80\omega_4^2 c_s^2\omega_1^2\omega_2\omega_3^2 + 96v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 + 56\omega_4^2 c_s^2\omega_1\omega_2^3\omega_3 - 56\omega_4^2 c_s^2 v_2^2\omega_1\omega_2^3\omega_3 + 192\omega_4^2 c_s^4\omega_1^2\omega_2^2\omega_3 - 8\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_2\omega_3^2 - 36v_1^4\omega_4^2\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2 v_2^2\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2\omega_2^3\omega_3^2 + 192\omega_4^2 c_s^4\omega_1^2\omega_2^2\omega_3^2 + 8\omega_4^2 c_s^2 v_2^2\omega_1\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^3\omega_2\omega_3^2 - 27\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_2^3\omega_3 + 144\omega_4^2 c_s^4\omega_1^3\omega_3^2 - 432v_1^2\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3^2 - 54c_s^2 v_2^2\omega_1^3\omega_2^3\omega_3^2 + 27\omega_4^2 c_s^2\omega_1^3\omega_3^2\omega_3 + 48v_1^4\omega_4^2\omega_1^3\omega_3^2 - 24v_1^2\omega_4^2 v_2^2\omega_1^2\omega_2\omega_3^2 + 27\omega_4 c_s^2 v_2^2\omega_1^3\omega_2^3\omega_3^2 + 64\omega_4^2 c_s^2\omega_1\omega_2^3\omega_3^2 + 10\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_2^3\omega_3^2 - 24\omega_4^2 c_s^4\omega_1^3\omega_2\omega_3 + 432v_1^2\omega_4^2 c_s^2\omega_1^3\omega_3^2 + 72v_1^4\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 324\omega_4^2 c_s^4\omega_1^2\omega_3^2\omega_3 - 16\omega_4^2 v_2^2\omega_1^2\omega_2^2\omega_3^2 + 72v_1^2\omega_4^2 v_2^2\omega_3^2\omega_3^2 - 96v_1^2\omega_4^2 v_2^2\omega_1\omega_2^2\omega_3^2 - 10\omega_4^2 c_s^2\omega_1^3\omega_2^2\omega_3^2 - 192v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 8\omega_4^2\omega_1\omega_2^3\omega_3^2 - 40\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_2\omega_3^2 + 24v_1^4\omega_4^2\omega_2^3\omega_3^2 - 54\omega_4^2 c_s^2\omega_1^3\omega_3^2 + 54\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_3^2 - 432v_1^2\omega_4^2 c_s^2\omega_1\omega_2^3\omega_3^2 + 8\omega_4^2 v_2^2\omega_1^2\omega_2\omega_3^2 - 216\omega_4^2 c_s^4\omega_1\omega_2^2\omega_3^2 - 72v_1^4\omega_4^2\omega_1^2\omega_2\omega_3^2 - 10\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_2^3\omega_3^2 + 10\omega_4^2 c_s^2\omega_1^2\omega_2^3\omega_3^2 + 144\omega_4^2 c_s^4\omega_2^3\omega_3^2 + 54c_s^2\omega_1^3\omega_2^3\omega_3^2 - 252\omega_4^2 c_s^4\omega_1^2\omega_3^2 + 96v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 112\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3^2 + 81\omega_4 c_s^4\omega_1^3\omega_2^3\omega_3^2 + 108\omega_4 c_s^2\omega_1^2\omega_2^3\omega_3^2 - 24\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_2^2 - 168\omega_4^2 c_s^4\omega_1\omega_3^3\omega_3 + 8\omega_4^2 v_2^2\omega_1\omega_2^3\omega_3^2 - 72\omega_4^2 c_s^4\omega_1^2\omega_2\omega_3^2 + 64\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_2^2\omega_3 + 24\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 324c_s^4\omega_1^2\omega_2^3\omega_3^2 + 96v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 + 48v_1^2\omega_4^2 v_2^2\omega_1^3\omega_3^2 - 64\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3 + 120v_1^2\omega_4^2 v_2^2\omega_1^2\omega_2^2\omega_3^2 + 432v_1^2\omega_4^2 c_s^2\omega_2^3\omega_3^2 + 162\omega_4^2 c_s^4\omega_1^3\omega_3^2 - 176\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3^2 - 432v_1^2\omega_4^2 c_s^2\omega_1\omega_2^2\omega_3^2 - 84\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_3^2 - 96v_1^2\omega_4^2\omega_1^3\omega_3^2 - 104\omega_4^2 c_s^2\omega_2^3\omega_3^2 + 32\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_2^2\omega_3^2 - 24\omega_4^2 c_s^4\omega_1\omega_2^3\omega_3^2 - 8\omega_4^2 v_2^2\omega_1^3\omega_3^2 - 8\omega_4^2\omega_1\omega_2^2\omega_3^2 + 32\omega_4^2 c_s^2 v_2^2\omega_2^3\omega_3^2 + 84\omega_4^2 c_s^2\omega_1^2\omega_3^2 - 81\omega_4^2 c_s^4\omega_1^3\omega_3^2\omega_3 - 108\omega_4^2 c_s^2\omega_1^2\omega_2^3\omega_3 + 108c_s^2 v_2^2\omega_1^2\omega_2^3\omega_3^2 + 8\omega_4^2\omega_1^3\omega_3^2 + 96v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 + 8\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3 - 108\omega_4 c_s^2 v_2^2\omega_1^2\omega_2^3\omega_3^2 - 60v_1^2\omega_4^2 v_2^2\omega_1^3\omega_2\omega_3^2 - 72\omega_4^2 c_s^4\omega_1^3\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2\omega_3^2 - 8\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_2\omega_3 + 30\omega_4^2 c_s^4\omega_1^3\omega_2^2\omega_3^2 - 432v_1^2\omega_4^2 c_s^2\omega_1^2\omega_2\omega_3^2 + 108\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_3^2\omega_3 + 8\omega_4^2 v_2^2\omega_1\omega_2^3\omega_3^2 - 36v_1^4\omega_4^2\omega_1\omega_2^3\omega_3^2$

$C_{33} = -6c_s^2\omega_1^3\omega_2 + 48c_s^2\omega_1^2\omega_2^2\omega_3 - 13v_1^2\omega_1\omega_2^3\omega_3 + 12c_s^2\omega_1^2\omega_2^2 + 10\omega_1\omega_2^3\omega_3 - 2v_2^2\omega_1\omega_2^2 + 2\omega_1\omega_2^2 - 3v_2^2\omega_1\omega_2^3\omega_3 + 10v_1^2\omega_2^3\omega_3 - 4v_1^2\omega_1\omega_2^2\omega_3 - 4v_2^2\omega_1^2\omega_2\omega_3 + 14\omega_1^2\omega_2\omega_3 - 24c_s^2\omega_1^3\omega_2\omega_3 - 4v_2^2\omega_1\omega_2^2\omega_3 - 22v_1^2\omega_1^2\omega_2\omega_3 + 8\omega_1\omega_2^2\omega_3 + 4v_2^2\omega_1^3\omega_3 - 12\omega_1^3\omega_3 + 26c_s^2\omega_2^3\omega_3 + 26v_1^2\omega_1^2\omega_2^2\omega_3 - 24c_s^2\omega_1\omega_2^3\omega_3 + 28c_s^2\omega_1^3\omega_3 - 10\omega_2^3\omega_3 + 4v_2^2\omega_2^3\omega_3 + 6v_2^2\omega_1^2\omega_2^2\omega_3 - 20\omega_1^2\omega_2^2\omega_3 - 24c_s^2\omega_1\omega_2^2\omega_3 - 2v_2^2\omega_1^3\omega_2 - 13v_1^2\omega_1^3\omega_2\omega_3 + 2\omega_1^3\omega_2 - 6c_s^2\omega_1\omega_2^3 + 16v_1^2\omega_1^3\omega_3 - 30c_s^2\omega_1^2\omega_2\omega_3 + 10\omega_1^3\omega_2\omega_3 - 4\omega_1^2\omega_2^2 + 4v_2^2\omega_1^2\omega_2^2 - 3v_2^2\omega_1^3\omega_2\omega_3$

$C_{34} = -48v_1^2\omega_4^2\omega_1\omega_5\omega_2^3\omega_3^2 + 648\omega_4 c_s^2 v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 48v_1^2\omega_4^2 c_s^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 24v_1^4\omega_4^2\omega_1^2\omega_5\omega_2\omega_3^2 - 168\omega_4^2 c_s^2 v_2^2\omega_1\omega_5\omega_2^2\omega_3^2 + 162v_1^2\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2^3 + 27\omega_4 c_s^2\omega_1^3 v_3^2\omega_5\omega_2^3\omega_3^2 + 216v_1^2\omega_4^2 v_2^2\omega_5\omega_2^3\omega_3^2 + 288\omega_4 c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 + 108v_1^2\omega_4 c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 24\omega_4^2 v_2^2\omega_1^2\omega_5\omega_2\omega_3^2 + 160\omega_4^2 c_s^4\omega_1\omega_5\omega_2^3\omega_3 - 24v_1^4\omega_4^2\omega_1^3\omega_5\omega_2\omega_3 + 16\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 180v_1^2\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 - 288\omega_4 c_s^4\omega_1\omega_5\omega_2^3\omega_3^2 - 160\omega_4^2 c_s^2\omega_1\omega_5\omega_2^3\omega_3 + 288\omega_4^2 c_s^4\omega_1^2\omega_2^3\omega_3^2 + 36v_1^4\omega_4\omega_1\omega_5\omega_2^3\omega_3^2 - 6\omega_4^2 c_s^2\omega_1^2 v_3^2\omega_5\omega_2^3\omega_3^2 - 12\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_5\omega_2\omega_3^2 - 108v_1^2\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2^2 - 162v_1^2 c_s^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 36\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2\omega_3^2 + 144v_1^2\omega_4^2 v_2^2\omega_1^3\omega_5\omega_2^3 + 336\omega_4^2 c_s^2 v_2^2\omega_1\omega_5\omega_2^3\omega_3 - 56\omega_4^2 c_s^4\omega_1\omega_5\omega_2^2\omega_3^2 + 24\omega_4^2 v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 - 72v_1^2\omega_4^2 c_s^2\omega_1^2\omega_5\omega_2^3\omega_3 + 108v_1^4\omega_4^2\omega_1\omega_5\omega_2^3\omega_3^2 - 36v_1^2\omega_4\omega_1\omega_5\omega_2^3\omega_3^2 + 64\omega_4^2 c_s^2\omega_1\omega_5\omega_2^2\omega_3^2 - 28\omega_4^2 c_s^4\omega_1^3\omega_5\omega_2\omega_3^2 - 216v_1^2\omega_4 c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 24v_1^2\omega_4^2\omega_1^3\omega_5\omega_2\omega_3 - 9\omega_4^2\omega_1^3 v_3^4\omega_5\omega_2^3\omega_3 - 108v_1^2\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2^3\omega_3 + 36v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 16\omega_4^2 c_s^4\omega_1^3\omega_5\omega_2\omega_3 + 360v_1^2\omega_4^2 v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 108v_1^2\omega_4 c_s^2\omega_1^2\omega_5\omega_2^3\omega_3 + 24\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_5\omega_2^3 + 132v_1^2\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2 + 324v_1^2 c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 64\omega_4^2 c_s^2\omega_1^2\omega_5\omega_2\omega_3^2 - 16\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2\omega_3 - 40\omega_4^2 c_s^2\omega_1^3\omega_5\omega_3^2 + 108v_1^2\omega_4 c_s^2\omega_1^3\omega_5\omega_2^3\omega_3^2 - 36v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 120\omega_4^2 c_s^2 v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 + 9\omega_4\omega_1^3 v_3^4\omega_5\omega_2^3\omega_3^2 + 72v_1^2\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2 - 56\omega_4^2 c_s^4\omega_1^2\omega_5\omega_2\omega_3^2 - 60v_1^2\omega_4^2 c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 12v_1^4\omega_4^2\omega_1\omega_5\omega_2^3\omega_3 + 2\omega_4^2\omega_1^2 v_3^2\omega_5\omega_2^3\omega_3^2 + 24\omega_4^2 v_2^2\omega_1^3\omega_5\omega_2\omega_3^2 - 108v_1^2\omega_4 c_s^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 72v_1^4\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2 + 240\omega_4^2 c_s^2 v_2^2\omega_5\omega_2^3\omega_3^2 - 162\omega_4 c_s^2 v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 2\omega_4^2\omega_1^3 v_3^4\omega_5\omega_2^2\omega_3^2 + 60v_1^2\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 36\omega_4^2 c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 + 48\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_5\omega_2\omega_3 - 54v_1^2\omega_4^2\omega_1^3\omega_5\omega_3^2 - 12v_1^2\omega_4^2\omega_1\omega_5\omega_2^3\omega_3 + 24\omega_4^2 v_2^2\omega_1\omega_5\omega_2^2\omega_3^2 - 96\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_5\omega_2\omega_3^2 + 24v_1^4\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2 + 108v_1^2\omega_4^2 c_s^2\omega_1^2\omega_5\omega_2^2\omega_3 + 54v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 88\omega_4^2 c_s^2\omega_5\omega_2^3\omega_3^2 - 108v_1^2\omega_4 c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 + 8\omega_4^2 c_s^4\omega_1\omega_5\omega_2^3\omega_3^2 + 18v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 288\omega_4 c_s^4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 216\omega_4^2 c_s^2\omega_1^2\omega_5\omega_2^3\omega_3 + 264v_1^2\omega_4^2 c_s^2\omega_1^3\omega_5\omega_3^2 - 144v_1^4\omega_4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 108v_1^4\omega_1^2\omega_5\omega_2^3\omega_3^2 - 180v_1^2\omega_4^2 v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 + 54v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3\omega_3 - 6\omega_4^2 c_s^4\omega_1^3\omega_5\omega_2^3\omega_3^2 + 8\omega_4^2\omega_1^3\omega_5\omega_3^2 - 180\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_5\omega_2^2\omega_3 - 348v_1^2\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2\omega_3^2 - 8\omega_4^2\omega_1\omega_5\omega_2^3\omega_3^2 - 108v_1^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 132\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 288\omega_4 c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 216\omega_4^2 c_s^4\omega_1^2\omega_5\omega_2^3\omega_3 + 18v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 648\omega_4 c_s^2 v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2 - 36v_1^2\omega_4\omega_1^3\omega_5\omega_2^3\omega_3^2 + 6\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_5\omega_2^2\omega_3^2 - 24v_1^2\omega_4^2 c_s^2\omega_1\omega_5\omega_2^2\omega_3^2 + 12v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3 - 72\omega_4^2 c_s^4\omega_1^3\omega_5\omega_2^2\omega_3 - 108v_1^2\omega_4 c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 - 72v_1^2\omega_4^2 v_2^2\omega_1^2\omega_5\omega_2\omega_3^2 + 8\omega_4^2\omega_5\omega_2^3\omega_3^2 - 54v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^3\omega_3 - 72\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 144v_1^2\omega_4\omega_1^2\omega_5\omega_2^3\omega_3^2 - 72\omega_4^2 c_s^4\omega_1^3\omega_2^3\omega_3^2 - 18v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3^2 - 216v_1^2\omega_4^2 c_s^2\omega_5\omega_2^3\omega_3^2 - 12v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3 + 36v_1^4\omega_4\omega_1^3\omega_5\omega_2^2\omega_3^2 - 27\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_5\omega_2^3\omega_3 + 72\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 - 18v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 180v_1^2\omega_4^2 c_s^2\omega_1\omega_5\omega_2^3\omega_3 - 216v_1^2\omega_4^2 c_s^2\omega_1^2\omega_5\omega_2^3 - 468\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_5\omega_2^3\omega_3 + 56\omega_4^2 c_s^4\omega_1^3\omega_5\omega_2^2\omega_3^2 - 84v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 36v_1^4\omega_4\omega_1^3\omega_5\omega_2^2\omega_3 - 54v_1^2\omega_4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 4\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 36v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3\omega_3 + 300v_1^2\omega_4^2 c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 + 9\omega_4^2\omega_1^3 v_3^2\omega_5\omega_2^3\omega_3 - 180v_1^2\omega_4^2 v_2^2\omega_1^3\omega_5\omega_2\omega_3^2 + 24v_1^2\omega_4^2\omega_5\omega_2^3\omega_3^2 + 112\omega_4^2 c_s^4\omega_1^2\omega_5\omega_2^2\omega_3 - 72v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 6\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 162\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_5\omega_2^3\omega_3 + 4\omega_4^2 c_s^4\omega_1^3\omega_5\omega_2^2\omega_3^2 - 8\omega_4^2\omega_1\omega_5\omega_2^3\omega_3^2 - 288\omega_4^2 c_s^4\omega_1\omega_2^3\omega_3^2 + 72v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 24\omega_4^2 v_2^2\omega_5\omega_2^3\omega_3^2 - 112\omega_4^2 c_s^2\omega_1^2\omega_5\omega_2^2\omega_3 - 36v_1^2\omega_4\omega_1^2\omega_5\omega_2^3\omega_3 - 96v_1^4\omega_4^2\omega_5\omega_2^3\omega_3^2 - 9\omega_4\omega_1^3 v_3^2\omega_5\omega_2^3\omega_3^2 - 36v_1^4\omega_4\omega_1^2\omega_5\omega_2^2\omega_3^2 + 32\omega_4^2 c_s^4\omega_1^3\omega_5\omega_2^3 - 72v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3 - 288v_1^2\omega_4^2 v_2^2\omega_1\omega_5\omega_2^2\omega_3^2 - 96v_1^2\omega_4^2\omega_1^3\omega_5\omega_3^2 - 24v_1^2\omega_4^2 c_s^2\omega_1^2\omega_5\omega_2^2\omega_3 - 28\omega_4^2 c_s^4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 264\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_5\omega_2^2\omega_3 - 54v_1^4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 36v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3\omega_3 - 2\omega_4^2\omega_1^2 v_3^4\omega_5\omega_2^3\omega_3^2 - 48\omega_4^2 v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 54v_1^4\omega_4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 72\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2^3\omega_3 + 36v_1^2\omega_4\omega_1^3\omega_5\omega_2^2\omega_3 - 36v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 72\omega_4 c_s^4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^2\omega_5\omega_2\omega_3^2 + 152\omega_4^2 c_s^4\omega_5\omega_2^3\omega_3^2 + 72v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2\omega_3 + 36v_1^2\omega_4\omega_1^2\omega_5\omega_2^2\omega_3^2 + 4\omega_4^2 c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 24\omega_4^2 v_2^2\omega_1^3\omega_5\omega_3^2 + 48v_1^4\omega_4^2\omega_1^3\omega_5\omega_3^2 + 36v_1^4\omega_4\omega_1^2\omega_5\omega_2^3\omega_3 + 6\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 72\omega_4^2 c_s^4\omega_1^3\omega_5\omega_2^3\omega_3 + 72\omega_4 c_s^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 54v_1^2\omega_1^3\omega_5\omega_2^3\omega_3^2 - 72v_1^2\omega_4^2 c_s^2\omega_1^3\omega_5\omega_2\omega_3$

$C_{35} = 27c_s^2\omega_1\omega_2\omega_3 - 9\omega_4 v_2^2\omega_1\omega_2 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 - 2\omega_4 v_2^2\omega_2\omega_3 + 6\omega_4 c_s^2\omega_1\omega_3 - 6\omega_4 c_s^2\omega_2\omega_3 + 9v_2^2\omega_1\omega_2\omega_3 + 2\omega_4 v_2^2\omega_1\omega_3 - 9\omega_1\omega_2\omega_3 - 2\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_{36} = -96\omega_4^2 v_2^2\omega_2^3\omega_3^2 + 128\omega_4^2 c_s^2\omega_1\omega_2^2\omega_3^2 - 72\omega_4^2 v_4^2\omega_1^2\omega_2\omega_3^2 + 432\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_3^2 - 104\omega_4^2 c_s^2\omega_1^3\omega_3^2 - 8v_1^2\omega_4^2\omega_2^3\omega_3^2 - 168\omega_4^2 c_s^4\omega_1^3\omega_2\omega_3^2 + 16\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 27\omega_4 c_s^2\omega_1^3\omega_2^3\omega_3^2 - 432\omega_4^2 c_s^2 v_2^2\omega_1\omega_2^2\omega_3^2 - 162c_s^4\omega_1^3\omega_2^3\omega_3^2 - 30\omega_4^2 c_s^4\omega_1^2\omega_2^3\omega_3^2 + 32v_1^2\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3^2 - 108c_s^2\omega_1^2\omega_2^3\omega_3^2 - 324\omega_4 c_s^4\omega_1^2\omega_2^3\omega_3^2 - 60v_1^2\omega_4^2 v_2^2\omega_1\omega_2^3\omega_3^2 + 80\omega_4^2 c_s^2\omega_1^2\omega_2\omega_3^2 + 8v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 + 56\omega_4^2 c_s^2\omega_1\omega_2^3\omega_3 + 192\omega_4^2 c_s^4\omega_1^2\omega_2^2\omega_3 - 432\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_2\omega_3^2 + 108v_1^2\omega_4^2 c_s^2\omega_1^2\omega_2^3\omega_3 + 96\omega_4^2 v_2^2\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2\omega_2^3\omega_3^2 - 8v_1^2\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3 + 192\omega_4^2 c_s^4\omega_1^2\omega_2^2\omega_3^2 + 24\omega_4^2 v_2^4\omega_2^3\omega_3^2 - 432\omega_4^2 c_s^2 v_2^2\omega_1\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^3\omega_2\omega_3^2 - 10v_1^2\omega_4^2 c_s^2\omega_1^2\omega_2^3\omega_3^2 + 144\omega_4^2 c_s^4\omega_1^2\omega_3^2 + 27\omega_4^2 c_s^2\omega_1^3\omega_2^3\omega_3 - 24v_1^2\omega_4^2 v_2^2\omega_1^2\omega_2\omega_3^2 + 64\omega_4^2 c_s^2\omega_1\omega_2^3\omega_3^2 - 24\omega_4^2 c_s^4\omega_1^3\omega_2\omega_3 + 32v_1^2\omega_4^2 c_s^2\omega_1^3\omega_3^2 + 324\omega_4^2 c_s^4\omega_1^2\omega_3^2\omega_3 - 192\omega_4^2 v_2^2\omega_1^2\omega_2^2\omega_3^2 + 64v_1^2\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3 + 72v_1^2\omega_4^2 v_2^2\omega_3^2\omega_3^2 - 96v_1^2\omega_4^2 v_2^2\omega_1\omega_2^2\omega_3^2 - 108v_1^2\omega_4 c_s^2\omega_1^2\omega_2^3\omega_3^2 - 36\omega_4^2 v_2^4\omega_1^3\omega_2^3 - 10\omega_4^2 c_s^2\omega_1^3\omega_2^2\omega_3^2 - 16v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 8\omega_4^2\omega_1\omega_2^3\omega_3^2 - 27v_1^2\omega_4^2 c_s^2\omega_1^3\omega_2^3\omega_3 - 432\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_2\omega_3^2 - 54\omega_4^2 c_s^2\omega_1^3\omega_2^3 - 8v_1^2\omega_4^2 c_s^2\omega_1\omega_2^3\omega_3^2 + 96\omega_4^2 v_2^2\omega_1^2\omega_2\omega_3^2 - 216\omega_4^2 c_s^4\omega_1\omega_2^2\omega_3^2 + 10\omega_4^2 c_s^2\omega_1^2\omega_2^3\omega_3^2 + 144\omega_4^2 c_s^4\omega_2^3\omega_3^2 + 54c_s^2\omega_1^3\omega_2^3\omega_3^2 - 252\omega_4^2 c_s^4\omega_1^2\omega_3^2 + 8v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 112\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3^2 + 48\omega_4^2 v_2^4\omega_1^3\omega_3^2 + 81\omega_4 c_s^4\omega_1^3\omega_2^3\omega_3^2 + 108\omega_4 c_s^2\omega_1^2\omega_2^3\omega_3^2 - 168\omega_4^2 c_s^4\omega_1\omega_3^3\omega_3 + 96\omega_4^2 v_2^2\omega_1\omega_2^2\omega_3^2 - 72\omega_4^2 c_s^4\omega_1^2\omega_2\omega_3^2 + 10v_1^2\omega_4^2 c_s^2\omega_1^3\omega_2^2\omega_3^2 + 24\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 324c_s^4\omega_1^2\omega_2^3\omega_3^2 - 36\omega_4^2 v_2^4\omega_1^3\omega_2\omega_3^2 + 8v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 + 48v_1^2\omega_4^2 v_2^2\omega_1^3\omega_3^2 - 84v_1^2\omega_4^2 c_s^2\omega_1^2\omega_3^2 - 64\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3 + 120v_1^2\omega_4^2 v_2^2\omega_1^2\omega_2^2\omega_3^2 + 32v_1^2\omega_4^2 c_s^2\omega_2^3\omega_3^2 - 24v_1^2\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 27v_1^2\omega_4 c_s^2\omega_1^3\omega_2^3\omega_3^2 + 162\omega_4^2 c_s^4\omega_1^3\omega_3^2 - 176\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3^2 - 56v_1^2\omega_4^2 c_s^2\omega_1\omega_2^2\omega_3^2 - 8v_1^2\omega_4^2\omega_1^3\omega_3^2 - 104\omega_4^2 c_s^2\omega_2^3\omega_3^2 + 864\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_2^2\omega_3^2 - 24\omega_4^2 c_s^4\omega_1\omega_2^3\omega_3^2 - 96\omega_4^2 v_2^2\omega_1^3\omega_3^2 - 8\omega_4^2\omega_1\omega_2^2\omega_3^2 + 432\omega_4^2 c_s^2 v_2^2\omega_2^3\omega_3^2 +$

$84\omega_4^2c_s^2\omega_1^2\omega_2^3 - 81\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3 + 72\omega_4^2v_2^4\omega_1^2\omega_2^2\omega_3^2 - 108\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 + 8\omega_4^2\omega_1^3\omega_3^2 + 8v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 + 8\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 54v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^3 -$
$60v_1^2\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 - 72\omega_4^2c_s^4\omega_1^3\omega_2^2 - 8\omega_4^2\omega_1^2\omega_2\omega_3^2 + 30\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 - 54v_1^2c_s^2\omega_1^3\omega_2^3\omega_3^2 - 56v_1^2\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 - 8v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 96\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2$

$C_{37} = 24v_1^2\omega_4^2\omega_1\omega_5\omega_2^3\omega_3^2 - 216\omega_4c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 24\omega_4^2v_4^2\omega_1^3\omega_5\omega_2\omega_3 + 132v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 24\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_2^2\omega_3^2 + 27\omega_4c_s^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3^2 +$
$216v_1^2\omega_4^2v_2^2\omega_5\omega_2^3\omega_3^2 + 288\omega_4c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 + 160\omega_4^2c_s^4\omega_1\omega_5\omega_2^3\omega_3 + 24\omega_4^2v_2^2\omega_1^3\omega_5\omega_2\omega_3 + 16\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 180v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 -$
$288\omega_4c_s^4\omega_1\omega_5\omega_2^3\omega_3^2 + 24\omega_4^2v_2^4\omega_1^2\omega_5\omega_2\omega_3^2 - 160\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3 + 288\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 + 324c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 6\omega_4^2c_s^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2 -$
$348\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3^2 + 144v_1^2\omega_4^2v_2^2\omega_1^3\omega_5\omega_3^2 + 180\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_2^3\omega_3 + 24v_1^2\omega_4^2\omega_1^2\omega_5\omega_2\omega_3^2 - 56\omega_4^2c_s^4\omega_1\omega_5\omega_2^2\omega_3^2 -$
$48\omega_4^2v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 - 468v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3 + 64\omega_4^2c_s^2\omega_1\omega_5\omega_2^2\omega_3^2 + 108\omega_4c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 - 28\omega_4^2c_s^4\omega_1^3\omega_5\omega_2\omega_3^2 + 648v_1^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 +$
$108\omega_4^2v_2^4\omega_1\omega_5\omega_2^3\omega_3^2 - 108\omega_4c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3 - 9\omega_4^2\omega_1^3v_3^4\omega_5\omega_2^3\omega_3 + 162v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3\omega_3 + 16\omega_4^2c_s^4\omega_1^3\omega_5\omega_2\omega_3 + 360v_1^2\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 -$
$72\omega_4^2v_2^4\omega_1^2\omega_5\omega_2^3 + 264\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^3 + 24v_1^2\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2 - 36\omega_4v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 + 64\omega_4^2c_s^2\omega_1^2\omega_5\omega_2\omega_3^2 + 12\omega_4^2v_2^4\omega_1\omega_5\omega_2^3\omega_3 - 16\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3 -$
$96\omega_4^2v_2^4\omega_5\omega_2^3\omega_3^2 - 40\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2 - 162v_1^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 300\omega_4^2c_s^2v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 + 9\omega_4\omega_1^3v_3^4\omega_5\omega_2^3\omega_3^2 + 36\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^2 + 24v_1^2\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2 +$
$36\omega_4v_2^4\omega_1\omega_5\omega_2^3\omega_3^2 - 56\omega_4^2c_s^4\omega_1^2\omega_5\omega_2\omega_3^2 - 12\omega_4^2v_2^2\omega_1\omega_5\omega_2^3\omega_3 - 6v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 108\omega_4c_s^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 + 2\omega_4^2\omega_1^2v_3^2\omega_5\omega_2^3\omega_3^2 +$
$132\omega_4^2v_2^2\omega_1^3\omega_5\omega_2\omega_3^2 + 24\omega_4^2v_2^4\omega_1\omega_5\omega_2^2\omega_3^2 - 216\omega_4^2c_s^2v_2^2\omega_5\omega_2^3\omega_3^2 + 108\omega_4c_s^2v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 2\omega_4^2\omega_1^3v_3^4\omega_5\omega_2^2\omega_3^2 + 6v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 +$
$36\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 - 72\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2\omega_3 - 162c_s^2v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 72\omega_4^2v_2^2\omega_1\omega_5\omega_2^2\omega_3^2 - 216\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3 - 24\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2\omega_3^2 -$
$72\omega_4^2v_2^4\omega_1^3\omega_5\omega_2\omega_3^2 + 264v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3 + 108\omega_4c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3 - 88\omega_4^2c_s^2\omega_5\omega_2^3\omega_3^2 - 54\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^3 + 8\omega_4^2c_s^4\omega_1\omega_5\omega_2^3\omega_3^2 + 48\omega_4^2v_2^4\omega_1^3\omega_5\omega_3^2 +$
$288\omega_4c_s^4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 216\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3 + 24v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2 - 18\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 - 36\omega_4v_2^4\omega_1^3\omega_5\omega_2^2\omega_3 - 180v_1^2\omega_4^2v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 -$
$6\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3\omega_3^2 + 8\omega_4^2\omega_1^3\omega_5\omega_3^2 + 180\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3 + 36\omega_4v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 12v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3^2 + 12\omega_4^2v_2^4\omega_1^2\omega_5\omega_2^2\omega_3 - 8\omega_4^2\omega_1\omega_5\omega_2^2\omega_3^2 +$
$18\omega_4^2v_2^4\omega_1^3\omega_5\omega_2^2\omega_3^2 + 36\omega_4v_2^2\omega_1^3\omega_5\omega_2^2\omega_3 + 48\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 288\omega_4c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 216\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3\omega_3 - 36\omega_4v_2^4\omega_1^2\omega_5\omega_2^2\omega_3^2 -$
$12\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3 - 108\omega_4c_s^2v_2^2\omega_1\omega_5\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^3\omega_5\omega_2\omega_3^2 + 6\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2 - 168v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2\omega_3^2 - 72\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3 -$
$648v_1^2\omega_4c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 - 72v_1^2\omega_4^2v_2^2\omega_1^2\omega_5\omega_2\omega_3^2 - 54v_4^2\omega_1^3\omega_5\omega_2^3\omega_3^2 - 36\omega_4v_2^2\omega_1^2\omega_5\omega_2^3\omega_3 - 18\omega_4^2v_4^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 8\omega_4^2\omega_5\omega_2^3\omega_3^2 - 72\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3^2 +$
$54\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^3\omega_3 - 72\omega_4^2c_s^4\omega_1^3\omega_2^3\omega_3^2 + 54\omega_4v_2^4\omega_1^3\omega_5\omega_2^3\omega_3^2 + 240v_1^2\omega_4^2c_s^2\omega_5\omega_2^3\omega_3^2 + 36\omega_4v_2^4\omega_1^2\omega_5\omega_2^3\omega_3 + 18\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 -$
$27\omega_4^2c_s^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3 + 72\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3 + 54v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 336v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3 - 54\omega_4^2v_2^4\omega_1^3\omega_5\omega_2^3\omega_3 - 54\omega_4v_2^2\omega_1^3\omega_5\omega_2^3\omega_3^2 -$
$72\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3 + 56\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2\omega_3^2 - 144\omega_4v_2^4\omega_1^2\omega_5\omega_2^3\omega_3^2 - 48v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 36\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3 + 162\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^3 -$
$4\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2\omega_3^2 - 120v_1^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3\omega_3^2 + 9\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^3\omega_3 + 72\omega_4^2v_2^2\omega_1^2\omega_5\omega_3^2 - 180v_1^2\omega_4^2v_2^2\omega_1^3\omega_5\omega_2\omega_3^2 + 108v_2^4\omega_1^2\omega_5\omega_2^3\omega_3^2 -$
$24v_1^2\omega_4^2\omega_5\omega_2^3\omega_3^2 + 112\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2\omega_3 - 60\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 108\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^3\omega_3 + 4\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2\omega_3^2 - 8\omega_4^2\omega_1\omega_5\omega_2^3\omega_3^2 - 288\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 +$
$144\omega_4v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 + 36\omega_4^2v_2^4\omega_1^2\omega_5\omega_2^3\omega_3 + 24\omega_4^2v_2^2\omega_5\omega_2^3\omega_3^2 - 108v_2^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 112\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2\omega_3 - 9\omega_4\omega_1^3v_3^2\omega_5\omega_2^3\omega_3^2 - 36\omega_4^2v_2^4\omega_1^3\omega_5\omega_2^2 +$
$32\omega_4^2c_s^4\omega_1^3\omega_5\omega_3^2 - 288v_1^2\omega_4^2v_2^2\omega_1\omega_5\omega_2^2\omega_3^2 - 24v_1^2\omega_4^2\omega_1^3\omega_5\omega_3^2 + 72\omega_4^2v_2^4\omega_1^3\omega_5\omega_2^2\omega_3 - 96v_1^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2\omega_3^2 - 36\omega_4v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 - 2\omega_4^2\omega_1^3v_3^2\omega_5\omega_2^2\omega_3^2 -$
$28\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3\omega_3^2 + 108\omega_4^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3 - 2\omega_4^2\omega_1^2v_3^4\omega_5\omega_2^3\omega_3^2 - 108\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^2 - 84\omega_4^2v_2^2\omega_1^2\omega_5\omega_2^2\omega_3^2 - 72\omega_4^2c_s^2\omega_1^3\omega_5\omega_3^2\omega_3 -$
$72\omega_4c_s^4\omega_1^3\omega_5\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^2\omega_5\omega_2\omega_3^2 + 54\omega_4^2v_2^4\omega_1^3\omega_5\omega_3^2 + 152\omega_4^2c_s^4\omega_5\omega_2^3\omega_3^2 + 4\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3\omega_3^2 - 96\omega_4^2v_2^2\omega_1^3\omega_5\omega_3^2 - 72\omega_4^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3 +$
$36\omega_4v_2^4\omega_1^3\omega_5\omega_2^2\omega_3^2 + 60\omega_4^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^2\omega_3^2 + 72\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3\omega_3 + 72\omega_4c_s^2\omega_1^3\omega_5\omega_2^3\omega_3^2 + 48v_1^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2\omega_3 - 36\omega_4^2v_2^4\omega_1^2\omega_5\omega_2^2\omega_3^2$

$C_{38} = -6c_s^2\omega_1^3\omega_2 + 48c_s^2\omega_1^2\omega_2^2\omega_3 - 3v_1^2\omega_1\omega_2^3\omega_3 + 12c_s^2\omega_1^2\omega_2^2 + 10\omega_1\omega_2^3\omega_3 + 2\omega_1\omega_2^3 - 13v_2^2\omega_1\omega_2^3\omega_3 + 4v_1^2\omega_2^3\omega_3 - 2v_1^2\omega_1^3\omega_2 - 4v_1^2\omega_1\omega_2^2\omega_3 -$
$22v_2^2\omega_1^2\omega_2\omega_3 + 14\omega_1^2\omega_2\omega_3 - 24c_s^2\omega_1^3\omega_2\omega_3 - 4v_2^2\omega_1\omega_2^2\omega_3 + 4v_1^2\omega_1^2\omega_2^2 - 4v_1^2\omega_1^2\omega_2\omega_3 + 8\omega_1\omega_2^2\omega_3 + 16v_2^2\omega_1^3\omega_3 - 12\omega_1^3\omega_3 + 26c_s^2\omega_2^3\omega_3 +$
$6v_1^2\omega_1^2\omega_2^2\omega_3 - 24c_s^2\omega_1\omega_2^3\omega_3 + 28c_s^2\omega_1^3\omega_3 - 2v_1^2\omega_1\omega_2^3 - 10\omega_2^3\omega_3 + 10v_2^2\omega_2^3\omega_3 + 26v_2^2\omega_1^2\omega_2^2\omega_3 - 20\omega_1^2\omega_2^2\omega_3 - 24c_s^2\omega_1\omega_2^2\omega_3 - 3v_1^2\omega_1^3\omega_2\omega_3 +$
$2\omega_1^3\omega_2 - 6c_s^2\omega_1\omega_2^2 + 4v_1^2\omega_1^3\omega_3 - 30c_s^2\omega_1^2\omega_2\omega_3 + 10\omega_1^3\omega_2\omega_3 - 4\omega_1^2\omega_2^2 - 13v_2^2\omega_1^3\omega_2\omega_3$

$C_{39} = -2v_1^2\omega_4\omega_2\omega_3 + 27c_s^2\omega_1\omega_2\omega_3 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 6\omega_4c_s^2\omega_1\omega_3 - 9v_1^2\omega_4\omega_1\omega_2 - 6\omega_4c_s^2\omega_2\omega_3 - 9\omega_1\omega_2\omega_3 + 9v_1^2\omega_1\omega_2\omega_3 +$
$2v_1^2\omega_4\omega_1\omega_3 - 2\omega_4\omega_1\omega_3 - 27\omega_4c_s^2\omega_1\omega_2$

$C_{40} = 160\omega_4^2v_2^2\omega_3^2\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 120\omega_4^2v_2^4\omega_1^2\omega_2\omega_3^2 + 320\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 - 104\omega_4^2c_s^2\omega_1^3\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 36\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 -$
$276\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 9\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2 - 56\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 + 54c_s^4\omega_1^3\omega_3^2\omega_3^2 - 342\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3^2 - 6\omega_4^2\omega_1^2v_3^4\omega_3^2\omega_3^2 + 36c_s^2\omega_1^2\omega_2^3\omega_3^2 -$
$6\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2 + 108\omega_4c_s^4\omega_1^2\omega_3^2\omega_3^2 + 6\omega_4^2\omega_1^3v_3^4\omega_2^2\omega_3^2 - 88\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 - 24\omega_4^2v_2^4\omega_1\omega_2^2\omega_3^2 + 56\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 - 56\omega_4^2c_s^2v_2^2\omega_1\omega_3^2\omega_3 +$
$92\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 120\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 + 448\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3^2 + 6\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2\omega_3^2 + 152\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2\omega_3^2\omega_3^2 + 12\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 144\omega_4^2v_2^4\omega_3^2\omega_3^2 +$
$1232\omega_4^2c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 - 20\omega_4^2\omega_1^3\omega_2\omega_3^2 - 9\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 + 144\omega_4^2c_s^4\omega_1^3\omega_3^2 - 14\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 18c_s^2v_2^2\omega_1^3\omega_2^3\omega_3^2 + 9\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 + 78\omega_4^2v_4^4\omega_1^3\omega_2^2\omega_3^2 +$
$6\omega_4^2\omega_1^2v_3^2\omega_2^3\omega_3^2 - 9\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 - 368\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 + 394\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 48\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 216\omega_4^2c_s^4\omega_1^2\omega_2^3\omega_3 + 104\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 -$
$6\omega_4^2\omega_1^3v_3^2\omega_2^3\omega_3^2 + 228\omega_4^2v_2^4\omega_1\omega_2^3\omega_3^2 - 118\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 28\omega_4^2\omega_1\omega_2^3\omega_3^2 - 712\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 108\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2 + 18\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 -$
$136\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 144\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 - 460\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 + 184\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 - 288\omega_4^2c_s^4\omega_3^2\omega_3^2 - 18c_s^2\omega_1^3\omega_2^3\omega_3^2 - 108\omega_4^2c_s^4\omega_1^2\omega_3^2 +$
$208\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 48\omega_4^2v_2^4\omega_1^3\omega_3^2 - 27\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 + 14\omega_4^2\omega_1^3\omega_3^2\omega_3^2 - 168\omega_4^2c_s^4\omega_1\omega_2^3\omega_3 + 32\omega_4^2v_2^2\omega_1\omega_3^2\omega_3^2 + 72\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2 +$
$40\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 + 18\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3^2 - 108c_s^4\omega_1^2\omega_3^2\omega_3^2 - 132\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 78\omega_4^2v_2^4\omega_1^2\omega_3^2\omega_3^2 + 54\omega_4^2c_s^4\omega_1^3\omega_3^2 + 52\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 +$
$18\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 36\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2 + 208\omega_4^2c_s^2\omega_3^2\omega_3^2 - 412\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 588\omega_4^2c_s^4\omega_1\omega_3^2\omega_3^2 - 56\omega_4^2v_2^2\omega_1^3\omega_3^2 - 8\omega_4^2\omega_1\omega_2^2\omega_3^2 - 784\omega_4^2c_s^2v_2^2\omega_3^2\omega_3^2 -$
$92\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^2\omega_3^2 - 27\omega_4^2c_s^4\omega_1^3\omega_3^2\omega_3 - 96\omega_4^2v_4^2\omega_1^2\omega_2^2\omega_3^2 - 72\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3 - 36c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 8\omega_4^2\omega_1^3\omega_3^2 - 18\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2 -$
$16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 36\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 16\omega_4^2\omega_1^2\omega_2\omega_3^2 + 16\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3 + 144\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 + 72\omega_4^2c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 - 256\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2$

$C_{41} = 10\omega_4c_s^4\omega_1^2\omega_2^2\omega_3 - 18\omega_4c_s^4\omega_1^2\omega_3^2 + 8\omega_4c_s^4\omega_1^3\omega_2 + 24\omega_4c_s^2v_2^2\omega_1\omega_2^3 - 60\omega_4c_s^2v_2^2\omega_1\omega_2^2\omega_3 + 36c_s^4\omega_1\omega_2^3\omega_3 + 138\omega_4v_2^4\omega_1^3\omega_2^2\omega_3 + \omega_4\omega_1^2v_3^2\omega_3^2\omega_3 +$
$8\omega_4\omega_1^2\omega_2\omega_3 - 54\omega_4c_s^2\omega_1\omega_3^2\omega_3 - 9\omega_4c_s^2\omega_1^3\omega_3^2 + 27c_s^2v_2^2\omega_1^3\omega_2^3\omega_3 + 120\omega_4c_s^2v_2^2\omega_1^2\omega_2\omega_3 + 84\omega_4v_2^2\omega_1^2\omega_2^2\omega_3 + 20\omega_4c_s^4\omega_1^2\omega_2^2 - \omega_4\omega_1^3v_3^2\omega_2^2\omega_3 +$
$18\omega_4c_s^2\omega_1^3\omega_2^2 - 60\omega_4v_2^2\omega_1^3\omega_3 - 4\omega_4\omega_1\omega_2^2\omega_3 + 408\omega_4v_2^4\omega_1\omega_2^3\omega_3 - 24\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 + 40\omega_4c_s^2\omega_2^3\omega_3 - 8\omega_4c_s^2\omega_1^3\omega_2 + 18\omega_4c_s^2\omega_1^2\omega_3^2 + 144\omega_4c_s^2v_2^2\omega_1^3\omega_3 +$
$192\omega_4v_2^4\omega_1^2\omega_2\omega_3 + 32\omega_4c_s^2\omega_1\omega_2^2\omega_3 + 7\omega_4\omega_1^3\omega_2^2\omega_3 - 32\omega_4c_s^4\omega_1^3\omega_2\omega_3 + 432\omega_4c_s^2v_2^2\omega_1\omega_3^2\omega_3 + 36c_s^2\omega_1^2\omega_3^2\omega_3 + 4\omega_4\omega_1^3\omega_3 + 108c_s^2v_2^2\omega_1\omega_3^2\omega_3 +$
$9\omega_4c_s^4\omega_1^3\omega_2^3 - 29\omega_4c_s^4\omega_1^2\omega_2^2\omega_3 - \omega_4\omega_1^2v_3^4\omega_2^3\omega_3 + 14\omega_4\omega_1\omega_2^3\omega_3 - 20\omega_4c_s^2\omega_1^2\omega_2^2 + 9c_s^4\omega_1^3\omega_2^3\omega_3 + \omega_4\omega_1^3v_3^4\omega_2^2\omega_3 - 24\omega_4v_2^4\omega_1\omega_2^2\omega_3 - 16\omega_4c_s^2\omega_1^2\omega_2\omega_3 +$
$81\omega_4v_2^2\omega_1^2\omega_2^3\omega_3 + 153\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 + 96\omega_4v_2^4\omega_1^3\omega_3 - 18\omega_4c_s^4\omega_1^3\omega_2^2 - 68\omega_4c_s^4\omega_2^3\omega_3 + 138\omega_4v_2^2\omega_1^3\omega_2\omega_3 - 8\omega_4\omega_2^3\omega_3 - 6\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 -$
$288\omega_4c_s^2v_2^2\omega_1^3\omega_2\omega_3 - 108c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 - 54\omega_4c_s^2v_2^2\omega_1^3\omega_2^2 + 94\omega_4c_s^4\omega_1\omega_2^3\omega_3 - 153\omega_4c_s^2v_2^2\omega_1^2\omega_2^3\omega_3 - 36c_s^2\omega_1\omega_2^3\omega_3 - 312\omega_4c_s^2v_2^2\omega_2^3\omega_3 -$
$81\omega_4v_2^2\omega_1^3\omega_2^2\omega_3 - 168\omega_4v_2^4\omega_1^2\omega_2^2\omega_3 - 8\omega_4c_s^2\omega_1\omega_2^3 - 7\omega_4\omega_1^2\omega_2^3\omega_3 + 16\omega_4c_s^4\omega_1^3\omega_3 - 264\omega_4v_2^4\omega_2^3\omega_3 - 10\omega_4\omega_1^3\omega_2\omega_3 + 17\omega_4c_s^4\omega_1^3\omega_2^2\omega_3 +$
$27\omega_4c_s^2v_2^2\omega_1^3\omega_2^3 - 222\omega_4v_2^2\omega_1\omega_2^3\omega_3 - 90\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 + 3\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 - 28\omega_4c_s^4\omega_1\omega_2^2\omega_3 - 96\omega_4v_2^2\omega_1^2\omega_2\omega_3 + 60\omega_4c_s^2v_2^2\omega_1^2\omega_2^2 +$
$24\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 + 42\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 36c_s^4\omega_1^2\omega_2^3\omega_3 - 54\omega_4c_s^2v_2^2\omega_1^2\omega_2^3 - 9c_s^2\omega_1^3\omega_2^3\omega_3 - 20\omega_4c_s^2\omega_1^3\omega_3 + 24\omega_4c_s^2v_2^2\omega_1^3\omega_2 + 8\omega_4c_s^4\omega_1^2\omega_2\omega_3 +$
$8\omega_4c_s^4\omega_1\omega_2^3 + 12\omega_4v_2^2\omega_1\omega_2^2\omega_3 - 3\omega_4c_s^4\omega_1^3\omega_2^3\omega_3 + 144\omega_4v_2^2\omega_2^3\omega_3 - 240\omega_4v_2^4\omega_1^3\omega_2\omega_3 - 3\omega_4c_s^2\omega_1^2v_3^2\omega_2^3\omega_3 - 138\omega_4v_2^4\omega_1^2\omega_2^3\omega_3 - 4\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{42} = 6\omega_4 v_2^2\omega_1\omega_2\omega_3 + 18\omega_4\omega_1 v_3^2\omega_3 - 27c_s^2\omega_1\omega_2\omega_3 - 9\omega_4 v_2^2\omega_1\omega_2 + 2\omega_4\omega_2\omega_3 + 9\omega_4\omega_1\omega_2 + 4\omega_4 v_2^2\omega_2\omega_3 + 12\omega_4 c_s^2\omega_1\omega_3 + 6\omega_4 c_s^2\omega_2\omega_3 - 9v_2^2\omega_1\omega_2\omega_3 + 2\omega_4 v_2^2\omega_1\omega_3 + 9\omega_1\omega_2\omega_3 + 18\omega_4 c_s^2\omega_1\omega_2\omega_3 - 6\omega_4\omega_1\omega_2\omega_3 - 18\omega_4 v_3^2\omega_2\omega_3 - 8\omega_4\omega_1\omega_3 - 27\omega_4 c_s^2\omega_1\omega_2$

$C_{43} = -8\omega_4^2\omega_1^2 v_3^2\omega_2^2\omega_3^2 + 28\omega_4^2 c_s^2\omega_1\omega_2^2\omega_3^2 - 52\omega_4^2 c_s^2\omega_1^3\omega_3^2 - 28\omega_4^2 c_s^2\omega_1 v_3^2\omega_2^3\omega_3 + 24v_1^2\omega_4^2\omega_3^2\omega_3^2 - 102\omega_4^2 c_s^4\omega_1^3\omega_2\omega_3^2 + 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 9\omega_4 c_s^2\omega_1^3\omega_2^3\omega_3^2 - 30v_1^2\omega_4^2\omega_1 v_3^2\omega_2^3\omega_3^2 + 54c_s^4\omega_1^3\omega_2^3\omega_3^2 - 119\omega_4^2 c_s^4\omega_1^2\omega_2^2\omega_3^2 + 27v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 + 36c_s^2\omega_1^2\omega_2^3\omega_3^2 - 28\omega_4^2 c_s^2\omega_1 v_3^2\omega_2^2\omega_3^2 - 3\omega_4^2 c_s^2\omega_1^3\omega_2^3\omega_3^2 + 108\omega_4 c_s^4\omega_1^2\omega_2^3\omega_3^2 + 4\omega_4^2 c_s^2\omega_1^2\omega_2\omega_3^2 + 66v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 + 28\omega_4^2 c_s^2\omega_1\omega_2^3\omega_3 + 96\omega_4^2 c_s^4\omega_1^2\omega_2^2\omega_3 - 12v_1^2\omega_4^2\omega_1^2 v_3^2\omega_2\omega_3^2 - 27v_1^4\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 20\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_2\omega_3^2 - 36v_1^4\omega_4^2\omega_1^3\omega_2\omega_3^2 + 4\omega_4^2\omega_2^3\omega_3^2 + 24\omega_4^2 c_s^4\omega_1^2\omega_2^2\omega_3^2 - 4\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_2\omega_3 - 4\omega_4^2\omega_1^3\omega_2\omega_3^2 - 138v_1^2\omega_4^2 c_s^2\omega_1^2\omega_2^3\omega_3^2 - 48v_1^2\omega_4^2\omega_1 v_3^2\omega_2^2\omega_3^2 + 72\omega_4^2 c_s^4\omega_1^3\omega_3^2 - 324v_1^2\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3^2 + 9\omega_4^2 c_s^2\omega_1^3\omega_2^3\omega_3 + 24v_1^4\omega_4^2\omega_1^3\omega_3^2 - 4\omega_4^2 c_s^2\omega_1^2 v_3^2\omega_2\omega_3^2 - 58\omega_4^2 c_s^2\omega_1\omega_2^3\omega_3^2 + 16\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_3^2 - 30v_1^2\omega_4^2\omega_1^3 v_3^2\omega_2\omega_3^2 - 12\omega_4^2 c_s^4\omega_1^3\omega_2\omega_3 + 216v_1^2\omega_4^2 c_s^2\omega_1^3\omega_3^2 - 24\omega_4^2 c_s^2\omega_1^2 v_3^2\omega_3^2 - 36v_1^4\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 108\omega_4^2 c_s^4\omega_1^2\omega_2^3\omega_3 + 16\omega_4^2 c_s^2 v_3^2\omega_3^2\omega_3^2 - 25\omega_4^2 c_s^2\omega_1^3\omega_2^2\omega_3^2 + 4\omega_4^2 c_s^2\omega_1 v_3^2\omega_2^3\omega_3^2 - 24v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 4\omega_4^2\omega_1^3 v_3^2\omega_3^2 + 36\omega_4 c_s^2\omega_1^2 v_3^2\omega_2^3\omega_3^2 - 4\omega_4^2\omega_1\omega_2^3\omega_3^2 - 60v_1^4\omega_4^2\omega_2^3\omega_3^2 - 18\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 4\omega_4^2\omega_1^3 v_3^2\omega_2\omega_3^2 + 3\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_2^3\omega_3^2 + 324v_1^2\omega_4^2 c_s^2\omega_1\omega_2^3\omega_3^2 - 72\omega_4^2 c_s^4\omega_1\omega_2^2\omega_3^2 - 36c_s^2\omega_1^2 v_3^2\omega_2^3\omega_3^2 + 49\omega_4^2 c_s^2\omega_1^2\omega_2^3\omega_3^2 - 18c_s^2\omega_1^3\omega_2^3\omega_3^2 + 36\omega_4^2 c_s^2\omega_1^2 v_3^2\omega_2^3\omega_3 - 72\omega_4^2 c_s^4\omega_1^2\omega_3^2 + 12v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 74\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3^2 + 4\omega_4^2\omega_1 v_3^2\omega_2^2\omega_3^2 - 27\omega_4 c_s^4\omega_1^3\omega_2^3\omega_3^2 - 36\omega_4 c_s^2\omega_1^2\omega_3^2\omega_3^2 + 36v_1^4\omega_4^2\omega_1\omega_2^2\omega_3^2 - 84\omega_4^2 c_s^4\omega_1\omega_2^3\omega_3 + 138v_1^2\omega_4^2 c_s^2\omega_1^3\omega_2^2\omega_3^2 + 12\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 15\omega_4^2 c_s^4\omega_1^3\omega_2^2\omega_3^2 - 108c_s^4\omega_1^2\omega_3^2\omega_3^2 + 12v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 - 4\omega_4^2 v_3^2\omega_3^2\omega_3^2 - 32\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3 + 16\omega_4^2 c_s^2\omega_1^2 v_3^2\omega_2^2\omega_3^2 - 216v_1^2\omega_4^2 c_s^2\omega_2^3\omega_3^2 + 4\omega_4^2\omega_1 v_3^2\omega_3^2\omega_3^2 + 54\omega_4^2 c_s^4\omega_1^3\omega_3^2 - 27v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 16\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3^2 + 32\omega_4^2 c_s^2\omega_1^2 v_3^2\omega_2^2\omega_3 + 18\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_3^2 + 8\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_2^2\omega_3^2 - 48v_1^2\omega_4^2\omega_1^3\omega_3^2 + 20\omega_4^2 c_s^2\omega_3^2\omega_3^2 + 60v_1^2\omega_4^2\omega_1^2 v_3^2\omega_2^2\omega_3^2 + 78\omega_4^2 c_s^4\omega_1\omega_3^2\omega_3^2 - 4\omega_4^2\omega_1\omega_2^2\omega_3^2 + 36v_1^2\omega_4^2 v_3^2\omega_2^2\omega_3^2 + 24\omega_4^2 c_s^2\omega_1^2\omega_3^2 + 27v_1^4\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 27\omega_4^2 c_s^4\omega_1^3\omega_2^3\omega_3 - 36\omega_4^2 c_s^2\omega_1^2\omega_3^2\omega_3 + 18c_s^2\omega_1^3 v_3^2\omega_2^3\omega_3^2 + 4\omega_4^2\omega_1^2 v_3^2\omega_2\omega_3^2 + 4\omega_4^2\omega_1^3\omega_3^2 - 32\omega_4^2 c_s^2\omega_1^2 v_3^2\omega_2^3\omega_3^2 - 42v_1^2\omega_4^2\omega_1\omega_3^2\omega_3^2 + 4\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3 + 24v_1^2\omega_4^2\omega_1^3 v_3^2\omega_3^2 - 36\omega_4^2 c_s^4\omega_1^3\omega_2^2 - 9\omega_4 c_s^2\omega_1^3 v_3^2\omega_2^3\omega_3^2 - 4\omega_4^2\omega_1^2\omega_2\omega_3^2 + 35\omega_4^2 c_s^4\omega_1^3\omega_2^2\omega_3^2 - 9\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_2^3\omega_3 - 12\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_2^2 + 72v_1^4\omega_4^2\omega_1^3\omega_2^3\omega_3^2$

$C_{44} = -18c_s^2\omega_1^3\omega_2 - 9\omega_1 v_3^2\omega_2^3\omega_3 - 23\omega_1^3\omega_2^2\omega_3 + 12v_3^2\omega_2^3\omega_3 + 141v_1^2\omega_1\omega_2^3\omega_3 - 12\omega_1^2 v_3^2\omega_2\omega_3 + 12\omega_1^3 v_3^2\omega_3 + 36c_s^2\omega_1^2\omega_2^2 - 60\omega_1\omega_2^3\omega_3 + 6\omega_1\omega_2^3 + 50v_1^2\omega_1^3\omega_2^2\omega_3 - 114v_1^2\omega_2^3\omega_3 + 60v_1^2\omega_1\omega_2^2\omega_3 + 12\omega_1^2 v_3^2\omega_2^2 - 9\omega_1^3 v_3^2\omega_2\omega_3 - 42c_s^2\omega_1^2\omega_2^3\omega_3 + 6\omega_1^2\omega_2\omega_3 - 12\omega_1 v_3^2\omega_2^2\omega_3 - 108c_s^2\omega_1^3\omega_2\omega_3 + 6v_1^2\omega_1^2\omega_2\omega_3 - 12\omega_1\omega_2^2\omega_3 - 36\omega_1^3\omega_3 - 66c_s^2\omega_2^3\omega_3 - 66v_1^2\omega_1^2\omega_2^2\omega_3 - 6\omega_1^3 v_3^2\omega_2 + 108c_s^2\omega_1\omega_2^3\omega_3 + 84c_s^2\omega_1^3\omega_3 + 42\omega_2^3\omega_3 - 6\omega_1 v_3^2\omega_2^2 + 42c_s^2\omega_1^3\omega_2^2\omega_3 + 12\omega_1^2\omega_2^2\omega_3 + 18\omega_1^2 v_3^2\omega_2^2\omega_3 - 50v_1^2\omega_1^2\omega_2^3\omega_3 - 75v_1^2\omega_1^3\omega_2\omega_3 + 6\omega_1^3\omega_2 - 18c_s^2\omega_1\omega_2^2 + 48v_1^2\omega_1^3\omega_3 + 23\omega_1^2\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2\omega_3 + 48\omega_1^3\omega_2\omega_3 - 12\omega_1^2\omega_2^2$

$C_{45} = 56\omega_4 c_s^4\omega_1^2\omega_2^2\omega_3 - 36v_1^2\omega_4\omega_1^2 v_3^2\omega_2\omega_3^2 - 6v_1^2\omega_4\omega_1\omega_2^3\omega_3 - 90v_1^2\omega_4 c_s^2\omega_1^2\omega_2^3\omega_3 - 68\omega_4 c_s^4\omega_2^3\omega_3^2 - 36v_1^2\omega_4 c_s^2\omega_1^3\omega_2\omega_3 + 6v_1^4\omega_4\omega_1\omega_2^3\omega_3 - 54v_1^2 c_s^2\omega_1^2\omega_2^2\omega_3^2 + 216c_s^2\omega_1 v_3^2\omega_2^3\omega_3^2 + 12v_1^4\omega_4\omega_1^2\omega_2\omega_3^2 - 12\omega_4\omega_1^3 v_3^2\omega_3^2 + \omega_4\omega_1^3 v_3^4\omega_2^2\omega_3^2 + 18c_s^4\omega_1^3\omega_2^3\omega_3^2 + 48\omega_4 c_s^2\omega_1 v_3^2\omega_3^2\omega_3^2 - 4\omega_4\omega_1\omega_2^3\omega_3^2 - 8\omega_4 c_s^2\omega_1\omega_2^3\omega_3 - 48v_1^2\omega_4\omega_1^3\omega_3^2 + 32\omega_4 c_s^2\omega_1^2\omega_2\omega_3^2 + 24\omega_4 c_s^2\omega_1^3 v_3^2\omega_2\omega_3 - 36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 - 14\omega_4 c_s^4\omega_1^3\omega_2\omega_3^2 - 90v_1^2\omega_4\omega_1 v_3^2\omega_3^2\omega_3^2 + 72c_s^2\omega_1^2\omega_2^3\omega_3^2 - 108v_1^2\omega_4 c_s^2\omega_2^3\omega_3^2 - 14\omega_4 c_s^4\omega_1^2\omega_2^3\omega_3^2 - 18v_1^4\omega_1^2\omega_2^3\omega_3^2 + 36v_1^2\omega_4\omega_1\omega_2^2\omega_3^2 - 12\omega_4 v_3^2\omega_2^3\omega_3^2 + 4\omega_4\omega_1^3\omega_3^2 - \omega_4\omega_1^2 v_3^4\omega_2^3\omega_3^2 + 54v_1^2\omega_4 c_s^2\omega_1^2\omega_3^2 + 24v_1^2\omega_4 c_s^2\omega_1^2\omega_2^2\omega_3^2 - 24\omega_4\omega_1^2 v_3^2\omega_2^2\omega_3^2 + 36v_1^4\omega_4\omega_1^3\omega_2^2\omega_3 + 32\omega_4 c_s^2\omega_1\omega_2^2\omega_3^2 - 18v_1^4\omega_4\omega_1^3\omega_2^2 + 36\omega_4 c_s^2\omega_1^3\omega_2^2\omega_3 + 54v_1^2 c_s^2\omega_1^2\omega_2^3\omega_3 + 12v_1^4\omega_4\omega_1\omega_2^2\omega_3^2 + 18v_1^2\omega_1^3\omega_2^2\omega_3 - 48\omega_4 c_s^2\omega_1^2 v_3^2\omega_2\omega_3^2 + 18v_1^4\omega_4\omega_1^2\omega_2^3 - 84\omega_4 c_s^2\omega_1 v_3^2\omega_2^2\omega_3^2 - 4\omega_4\omega_1\omega_2^2\omega_3^2 + 108v_1^2\omega_4 v_3^2\omega_2^2\omega_3^2 + 9v_1^4\omega_4\omega_1^3\omega_2^2\omega_3^2 - 48v_1^4\omega_4\omega_3^2\omega_3^2 - 18v_1^2\omega_1^3\omega_2^2\omega_3^2 + 28\omega_4 c_s^2\omega_3^2\omega_3^2 - 2\omega_4 c_s^2\omega_1^3\omega_2^2\omega_3^2 - 54v_1^2 c_s^2\omega_1^2\omega_3^2\omega_3^2 + 8\omega_4 c_s^4\omega_1^3\omega_2\omega_3 - 9v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2 - 6\omega_4 c_s^2\omega_1^3 v_3^2\omega_2\omega_3^2 - 54v_1^2\omega_4 c_s^2\omega_1^3\omega_2^2 + 18v_1^4\omega_4\omega_1^2\omega_2^3\omega_3 - 36\omega_4 c_s^4\omega_1^2\omega_3^2\omega_3 + 54v_1^2\omega_4 c_s^2\omega_1^2\omega_2^2\omega_3 - \omega_4\omega_1^3 v_3^2\omega_2^2\omega_3^2 - 96\omega_4 c_s^2 v_3^2\omega_3^2\omega_3^2 + 72c_s^4\omega_1\omega_2^2\omega_3^2 + 54v_1^4\omega_4\omega_1\omega_2^3\omega_3^2 - 18\omega_4 c_s^2\omega_1^3\omega_2^3\omega_3 + 60\omega_4 c_s^2\omega_1 v_3^2\omega_2^3\omega_3 - 4\omega_4\omega_1^2\omega_2\omega_3^2 + \omega_4\omega_1^2 v_3^2\omega_3^2\omega_3^2 - 90v_1^2\omega_4\omega_1^3 v_3^2\omega_2\omega_3^2 + 12\omega_4 c_s^2\omega_1^3 v_3^2\omega_3^2 - 18v_1^2\omega_1\omega_2^3\omega_3^2 - 18\omega_4 c_s^2\omega_1\omega_2^3\omega_3^2 - 24v_1^2\omega_4\omega_1\omega_2^3\omega_3^2 - 18v_1^4\omega_1^2\omega_2^2\omega_3^2 + 28\omega_4 c_s^4\omega_1^2\omega_2^2\omega_3^2 + 72v_1^2\omega_4\omega_1^3 v_3^2\omega_3^2 - 30v_1^2\omega_4 c_s^2\omega_1^2\omega_2^3\omega_3^2 - 144v_1^2\omega_4\omega_1 v_3^2\omega_2^2\omega_3^2 - 174v_1^2\omega_4 c_s^2\omega_1^3\omega_2\omega_3^2 - 6\omega_4 c_s^2\omega_1^2 v_3^2\omega_2^3\omega_3^2 + 6v_1^4\omega_4\omega_1^2\omega_2^2\omega_3 + 54v_1^2 c_s^2\omega_1\omega_3^2\omega_3^2 - 56\omega_4 c_s^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2^2\omega_3^2 - 216c_s^2\omega_1^2 v_3^2\omega_3^2\omega_3^2 - 20\omega_4 c_s^2\omega_1^3\omega_3^2 - 18c_s^2\omega_1^3\omega_2^3\omega_3^2 - 6v_1^2\omega_4\omega_1^2\omega_2^2\omega_3 + 24v_1^4\omega_4\omega_1^3\omega_3^2 - 28\omega_4 c_s^4\omega_1^2\omega_2\omega_3^2 + 8\omega_4 c_s^4\omega_1\omega_3^2\omega_3 + 30v_1^2\omega_4 c_s^2\omega_1^3\omega_2^2\omega_3^2 + 54\omega_4 c_s^2\omega_1^3 v_3^2\omega_3^2\omega_3 - 3\omega_4 c_s^4\omega_1^3\omega_2^2\omega_3^2 - 36v_1^4\omega_4\omega_1^3\omega_2\omega_3^2 + 18v_1^2\omega_1^2\omega_2^3\omega_3^2 + 2\omega_4 c_s^2\omega_1^2\omega_2^3\omega_3^2 + 54v_1^2 c_s^2\omega_1^3\omega_2^2\omega_3^2 + 18\omega_4 c_s^2\omega_1^3\omega_2\omega_3^2 + 12\omega_4\omega_1 v_3^2\omega_2^2\omega_3^2 + 132\omega_4 c_s^2\omega_1^2 v_3^2\omega_2^2\omega_3 - 9v_1^4\omega_4\omega_1^2\omega_3^2\omega_3^2 - 72c_s^4\omega_1^2\omega_2^3\omega_3^2 - 18v_1^4\omega_1^3\omega_2^2\omega_3 + 6\omega_4 c_s^2\omega_1^3 v_3^2\omega_2^2\omega_3^2 - 36\omega_4 c_s^4\omega_1^3\omega_2^2\omega_3 + 66v_1^2\omega_4\omega_1^3\omega_2\omega_3^2 + 150v_1^2\omega_4 c_s^2\omega_1\omega_3^2\omega_3^2 + 12\omega_4\omega_1^3 v_3^2\omega_2\omega_3^2 + 9v_1^2\omega_4\omega_1^2\omega_2^3\omega_3^2 + 18v_1^2\omega_4\omega_1^3\omega_2^2 - 28\omega_4 c_s^4\omega_1\omega_2^2\omega_3^2 + 12v_1^2\omega_4\omega_3^2\omega_3^2 + 12v_1^2\omega_4\omega_1^3\omega_2\omega_3 + 2\omega_4 c_s^4\omega_1^3\omega_2^2\omega_3 + 18v_1^4\omega_1^3\omega_2^2\omega_3^2 - 90\omega_4 c_s^2\omega_1^3 v_3^2\omega_2^2\omega_3 - 12v_1^2\omega_4 c_s^2\omega_1^2\omega_2\omega_3^2 - 18v_1^2\omega_4\omega_1^2\omega_2^3 - 18v_1^2\omega_4 c_s^2\omega_1\omega_2^3\omega_3 + 36v_1^2\omega_4\omega_1^2\omega_2^3\omega_3 + 36\omega_4 c_s^2\omega_1^2\omega_2^3\omega_3 - 54v_1^2 c_s^2\omega_1^3\omega_2^2\omega_3 - 12v_1^4\omega_4\omega_1^3\omega_2\omega_3 - 18v_1^2\omega_1^2\omega_2^3\omega_3 + 16\omega_4 c_s^4\omega_1^3\omega_2^3 + 12\omega_4\omega_1^2 v_3^2\omega_2\omega_3^2 + 66\omega_4 c_s^2\omega_1^2 v_3^2\omega_2^2\omega_3^2 - 36v_1^4\omega_4\omega_1^2\omega_2^3\omega_3 - 8\omega_4 c_s^2\omega_1^3\omega_2\omega_3 - 4\omega_4\omega_1^3\omega_2\omega_3^2 + 54c_s^2\omega_1^3 v_3^2\omega_2^3\omega_3^2 - 12v_1^2\omega_4 c_s^2\omega_1\omega_2^2\omega_3^2 + 76\omega_4 c_s^4\omega_1\omega_2^3\omega_3^2 + 18v_1^4\omega_1\omega_2^3\omega_3^2 - 42v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2 + 180v_1^2\omega_4\omega_1^2 v_3^2\omega_2^2\omega_3^2 - 72c_s^2\omega_1\omega_2^3\omega_3^2 + 90v_1^2\omega_4 c_s^2\omega_1^3\omega_2^2\omega_3 + 18\omega_4 c_s^4\omega_1^3\omega_2^3\omega_3 - 126\omega_4 c_s^2\omega_1^2 v_3^2\omega_2^3\omega_3 - 18v_1^4\omega_4\omega_1^2\omega_2^2\omega_3^2 + 12\omega_4\omega_1 v_3^2\omega_3^2\omega_3^2 + 4\omega_4\omega_3^2\omega_3^2 - 36\omega_4 c_s^2\omega_1^2\omega_2^2\omega_3^2 + 132v_1^2\omega_4 c_s^2\omega_1^3\omega_3^2 + 18v_1^2\omega_1^2\omega_2^2\omega_3^2$

$C_{46} =$
$-18c_s^2\omega_1^3\omega_2 + 4v_2^2\omega_1^3 - 12\omega_1\omega_2^2 - 6v_1^2\omega_1^2\omega_2 - 4v_3^2\omega_2^3 + 36c_s^2\omega_1^2\omega_2^2 - 3v_2^2\omega_1\omega_2^3 + 4\omega_1^3 v_3^2 + 6\omega_1\omega_2^3 - 12\omega_1^2 v_3^2\omega_2 - 3v_1^2\omega_1^3\omega_2 - 72c_s^2\omega_1^2\omega_2 + 4v_1^2\omega_1^3 + 6v_1^2\omega_1^2\omega_2^2 - 12\omega_1^3 + 36c_s^2\omega_1^3 + 24\omega_1^2\omega_2 + 12\omega_1 v_3^2\omega_2^2 - 6v_2^2\omega_1^2\omega_2 - 3v_1^2\omega_1\omega_2^3 + 2v_1^2\omega_2^3 + 36c_s^2\omega_1\omega_2^2 - 3v_2^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 - 18c_s^2\omega_1\omega_2^3 - 12\omega_1^2\omega_2^2 + 2v_2^2\omega_2^3 + 6v_2^2\omega_1^2\omega_2^2$

$C_{47} = 72\omega_4^2\omega_1^2 v_3^2\omega_2^2\omega_3^2 - 180\omega_4 v_2^2\omega_1^2\omega_2^3\omega_3^2 - 96\omega_4^2 v_2^2\omega_3^2\omega_3^2 - 72\omega_4^2 c_s^2\omega_1\omega_2^2\omega_3^2 + 336\omega_4^2 c_s^2\omega_1^3\omega_3^2 - 72\omega_4^2 v_2^2\omega_1^2\omega_3^2 + 72v_1^2\omega_4^2\omega_3^2\omega_3^2 + 54\omega_4^2\omega_1^3 v_3^2\omega_3^2 + 324\omega_4^2 c_s^2\omega_1^3\omega_2^2\omega_3 + 108\omega_4\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 189\omega_4 c_s^2\omega_1^3\omega_2^3\omega_3^2 + 180\omega_4\omega_1^2 v_3^2\omega_3^2\omega_3 - 60\omega_4^2 v_2^2\omega_1^2\omega_2\omega_3 - 36\omega_4\omega_1\omega_3^2\omega_3^2 + 36\omega_4^2\omega_1^3 v_3^2\omega_2^2\omega_3 - 36\omega_4^2\omega_1^3 v_3^2\omega_2^2 - 36\omega_4^2\omega_1^2 v_3^2\omega_2^3\omega_3 - 144\omega_4^2 c_s^2\omega_1^2\omega_2\omega_3^2 - 108v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 - 36\omega_4^2 c_s^2\omega_1\omega_2^3\omega_3 + 36\omega_4\omega_1^3 v_3^2\omega_2^2\omega_3 + 36\omega_4\omega_1^2 v_3^2\omega_2^2\omega_3^2 - 20\omega_4^2 v_2^2\omega_1^2\omega_3^2\omega_3^2 + 144\omega_4^2\omega_1^2\omega_2^2 - 54v_2^2\omega_1^3\omega_3^2\omega_3^2 + 48\omega_4^2\omega_1^3\omega_2\omega_3 - 72\omega_4^2 v_2^2\omega_1^3\omega_2\omega_3^2 + 72\omega_4\omega_1^3\omega_2^2\omega_3^2 + 24\omega_4^2\omega_3^2\omega_3^2 + 216\omega_4 c_s^2\omega_1^3\omega_2^2\omega_3 - 108\omega_4^2\omega_1^2\omega_2^3\omega_3 + 144\omega_4^2 v_2^2\omega_1^2\omega_3^2\omega_3 + 72\omega_4^2\omega_1^3\omega_2^2 + 144\omega_4^2\omega_1^3\omega_2\omega_3^2 - 24\omega_4^2 v_2^2\omega_1^3\omega_2\omega_3 - 72\omega_4\omega_1^3\omega_2^2\omega_3 - 216\omega_4 c_s^2\omega_1^3\omega_2^2\omega_3^2 + 20\omega_4^2\omega_1^2\omega_3^2\omega_3^2 - 189\omega_4^2 c_s^2\omega_1^3\omega_2^3\omega_3 + 54\omega_4^2 v_2^2\omega_1^3\omega_3^2 + 36\omega_4 v_2^2\omega_1^2\omega_2^2\omega_3 - 36\omega_4\omega_1^3 v_3^2\omega_2^2\omega_3^2 + 180\omega_4^2 c_s^2\omega_1\omega_3^2\omega_3^2 - 63\omega_4\omega_1^3\omega_2^3\omega_3^2 + 48\omega_4^2\omega_1^2\omega_2^2\omega_3 - 324\omega_4 c_s^2\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2\omega_1^3\omega_3^2 - 36\omega_4^2 v_2^2\omega_1^2\omega_2^2\omega_3^2 + 36\omega_4\omega_1^2 v_3^2\omega_3^2\omega_3^2 + 108\omega_4 c_s^2\omega_1\omega_2^3\omega_3^2 - 36\omega_4 v_2^2\omega_1^2\omega_3^2\omega_3 + 12\omega_4^2\omega_1^2 v_3^2\omega_2^2\omega_3 - 108\omega_4\omega_1^3 v_3^2\omega_2^3\omega_3 - 36\omega_4^2 v_2^2\omega_1^3\omega_2^2 + 60\omega_4^2 c_s^2\omega_1^3\omega_2^2\omega_3^2 + 216v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 54\omega_1^3 v_3^2\omega_3^2\omega_3^2 + 48\omega_4^2\omega_1^3 v_3^2\omega_3^2 - 36\omega_4^2\omega_1\omega_2^3\omega_3^2 + 108v_2^2\omega_1^2\omega_2^3\omega_3^2 + 324\omega_4^2 c_s^2\omega_1^3\omega_2^2 - 36\omega_4^2\omega_1^3 v_3^2\omega_2\omega_3^2 + 63\omega_4^2\omega_1^3\omega_2^3\omega_3 - 72\omega_4\omega_1^2\omega_2^2\omega_3^2 + 24\omega_4^2 v_2^2\omega_1^2\omega_2\omega_3^2 - 24\omega_4^2 v_2^2\omega_1\omega_2^2\omega_3 - 60\omega_4^2 c_s^2\omega_1^2\omega_2^3\omega_3^2 - 216v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 - 360\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3^2 - 48\omega_4^2\omega_1 v_3^2\omega_2^2\omega_3^2 + 36\omega_4 v_2^2\omega_1^3\omega_2^2\omega_3 - 432\omega_4 c_s^2\omega_1^2\omega_3^2 - 20\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 144\omega_4\omega_1^2\omega_3^2\omega_3 + 24\omega_4^2 v_2^2\omega_1\omega_2^2\omega_3^2 - 216\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 72\omega_4^2 v_2^2\omega_1^3\omega_2^2\omega_3 + 48\omega_4^2 v_2^2\omega_3^2\omega_3^2 + 12\omega_4^2\omega_1 v_3^2\omega_2^3\omega_3 + 63\omega_4 v_2^2\omega_1^3\omega_2^2\omega_3^2 - 144\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3 - 72\omega_4^2\omega_1^2 v_3^2\omega_3^2 - 36\omega_4^2\omega_1 v_3^2\omega_2^3\omega_3^2 + 180\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3^2 + 72\omega_4 v_2^2\omega_1\omega_2^3\omega_3^2 + 432\omega_4 c_s^2\omega_1^2\omega_2^3\omega_3 - 108\omega_4^2\omega_1^3\omega_2^2\omega_3 + 144v_1^2\omega_4^2\omega_1^3\omega_3^2 - 120\omega_4^2 c_s^2\omega_2^3\omega_3^2 + 144\omega_4\omega_1^2\omega_2^3\omega_3^2 + 48\omega_4^2 v_2^2\omega_1^3\omega_3^2 + 24\omega_4^2\omega_1\omega_2^2\omega_3^2 + 20\omega_4^2 v_2^2\omega_1^3\omega_2^2\omega_3^2 - 432\omega_4^2 c_s^2\omega_1^2\omega_3^2 + 324\omega_4^2 c_s^2\omega_1^2\omega_3^2\omega_3 - 48\omega_4^2\omega_1^2 v_3^2\omega_2\omega_3^2 - 144\omega_4^2\omega_1^3\omega_3^2 - 108v_1^2\omega_4^2\omega_1\omega_3^2\omega_3^2 - 144\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3 - 108\omega_1^2 v_3^2\omega_3^2\omega_3^2 - 36\omega_4 v_2^2\omega_1^3\omega_2^2\omega_3^2 + 12\omega_4^2\omega_1\omega_3^2\omega_3 - 36\omega_4\omega_1 v_3^2\omega_3^2\omega_3^2 + 96\omega_4^2\omega_1^2\omega_2\omega_3^2 - 63\omega_4^2 v_2^2\omega_1^3\omega_3^2\omega_3 + 216\omega_4 c_s^2\omega_1^2\omega_2^2\omega_3^2 - 24\omega_4^2\omega_1^3 v_3^2\omega_2\omega_3 + 108\omega_4^2 v_2^2\omega_1\omega_3^2\omega_3^2$

$C_{48} = 72\omega_4^2\omega_1^2 v_3^2\omega_2^2\omega_3^2 + 72\omega_4^2 v_2^2\omega_3^2\omega_3^2 - 72\omega_4^2 c_s^2\omega_1\omega_2^2\omega_3^2 - 72v_1^2\omega_4^2\omega_1^2\omega_3^2 + 336\omega_4^2 c_s^2\omega_1^3\omega_3^2 + 63v_1^2\omega_4\omega_1^3\omega_3^2\omega_3^2 - 60v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3 - 96v_1^2\omega_4^2\omega_3^2\omega_3^2 + 54\omega_4^2\omega_1^3 v_3^2\omega_3^2 + 324\omega_4^2 c_s^2\omega_1^3\omega_2^2\omega_3 + 108\omega_4\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 189\omega_4 c_s^2\omega_1^3\omega_2^3\omega_3^2 - 54v_1^2\omega_1^3\omega_2^3\omega_3^2 + 180\omega_4\omega_1^2 v_3^2\omega_3^2\omega_3 - 36\omega_4\omega_1\omega_2^3\omega_3^2 + 36\omega_4^2\omega_1^3 v_3^2\omega_2^2\omega_3 + 36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 - 36\omega_4^2\omega_1^3 v_3^2\omega_2^2 - 20v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 36\omega_4^2\omega_1^2 v_3^2\omega_3^2\omega_3 - 144\omega_4^2 c_s^2\omega_1^2\omega_2\omega_3^2 - 72v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 -$

$36\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 + 36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3 + 36\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2 + 144\omega_4^2\omega_1^2\omega_2^3 + 48\omega_4^2\omega_1^3\omega_2\omega_3 - 108\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 + 72\omega_4\omega_1^3\omega_2^2\omega_3^2 + 24\omega_4^2\omega_2^3\omega_3^2 +$
$216\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 - 108\omega_4^2\omega_1^2\omega_2^3\omega_3 + 72\omega_4^2\omega_1^3\omega_2^2 + 144\omega_4^2\omega_1^3\omega_2\omega_3^2 - 72\omega_4\omega_1^3\omega_2^2\omega_3 - 216\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 + 20\omega_4^2\omega_1^2\omega_2^3\omega_3^2 - 36v_1^2\omega_4\omega_1^3\omega_2^2\omega_3^2 -$
$189\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3 + 144v_1^2\omega_4^2\omega_1^2\omega_2^3\omega_3 + 54v_1^2\omega_4^2\omega_1^3\omega_3^2 - 24v_1^2\omega_4^2\omega_1^3\omega_2\omega_3 - 36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3^2 + 180\omega_4^2c_s^2\omega_1\omega_2^3\omega_3^2 - 63\omega_4\omega_1^3\omega_2^3\omega_3^2 + 48\omega_4^2\omega_1^2\omega_2^2\omega_3 -$
$324\omega_4c_s^2\omega_1^3\omega_2^3\omega_3 - 108\omega_4^2\omega_1^3\omega_2^2 + 216\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 36\omega_4\omega_1^2v_3^2\omega_2^3\omega_3^2 + 108\omega_4c_s^2\omega_1\omega_2^3\omega_3^2 + 72v_1^2\omega_4\omega_1\omega_2^3\omega_3^2 - 36v_1^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3 -$
$108\omega_4\omega_1^3v_3^2\omega_2^3\omega_3 + 60\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 36v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 54\omega_1^3v_3^2\omega_2^3\omega_3^2 + 48\omega_4^2\omega_1^3v_3^2\omega_3^2 - 36\omega_4^2\omega_1\omega_2^3\omega_3^2 + 324\omega_4^2c_s^2\omega_1^3\omega_2^2 - 36\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 +$
$63\omega_4^2\omega_1^3\omega_3^3\omega_3 - 72\omega_4\omega_1^2\omega_2^2\omega_3^2 - 216\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 60\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 24v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 - 24v_1^2\omega_4^2\omega_1\omega_2^3\omega_3 - 360\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 -$
$48\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 + 108v_1^2\omega_1^2\omega_2^3\omega_3^2 - 432\omega_4c_s^2\omega_1^2\omega_2^3\omega_3^2 - 20\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 144\omega_4\omega_1^2\omega_2^3\omega_3 - 216\omega_4^2c_s^2\omega_1^3\omega_2^2 + 24v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 + 48\omega_4^2v_3^2\omega_2^2\omega_3^2 +$
$12\omega_4^2\omega_1v_3^2\omega_2^3\omega_3 - 144\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 72\omega_4^2\omega_1^2v_3^2\omega_3^2 + 72v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3 - 180v_1^2\omega_4\omega_1^2\omega_2^3\omega_3^2 - 36\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 + 20v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 +$
$180\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 - 36v_1^2\omega_4\omega_1^2\omega_2^3\omega_3 + 432\omega_4c_s^2\omega_1^2\omega_2^3\omega_3 - 108\omega_4^2\omega_1^3\omega_2^2\omega_3 + 48v_1^2\omega_4^2\omega_1^3\omega_3^2 - 120\omega_4^2c_s^2\omega_2^3\omega_3^2 + 144\omega_4\omega_1^2\omega_2^3\omega_3^2 + 144\omega_4^2v_2^2\omega_1^3\omega_3^2 +$
$24\omega_4^2\omega_1\omega_2^2\omega_3^2 - 432\omega_4^2c_s^2\omega_1^2\omega_2^3 - 63v_1^2\omega_4^2\omega_1^3\omega_2^3\omega_3 + 324\omega_4^2c_s^2\omega_1^2\omega_2^3\omega_3 - 48\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 - 144\omega_4^2\omega_1^3\omega_3^2 + 36v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2 + 108v_1^2\omega_4^2\omega_1\omega_2^3\omega_3^2 -$
$144\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 - 108\omega_1^2v_3^2\omega_3^2\omega_3^2 + 12\omega_4^2\omega_1\omega_2^3\omega_3 - 36\omega_4\omega_1v_3^2\omega_2^2\omega_3^2 + 96\omega_4^2\omega_1^2\omega_2\omega_3^2 + 216\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 - 24\omega_4^2\omega_1^3v_3^2\omega_2\omega_3 - 108\omega_4^2v_2^2\omega_1\omega_2^3\omega_3^2$

$C_{49} = -4v_1^2\omega_4\omega_1^2\omega_2\omega_3^2 + v_1^2\omega_4\omega_1\omega_2^3\omega_3 - 3\omega_4v_2^2\omega_1^3\omega_2\omega_3^2 - 6\omega_1^3\omega_2^2\omega_3 + 12\omega_4\omega_1^3v_3^2\omega_3^2 + 3v_2^2\omega_1^3\omega_2^2\omega_3 + 6\omega_4\omega_1\omega_2^3\omega_3^2 + 6\omega_4c_s^2\omega_1\omega_2^3\omega_3 + 4v_1^2\omega_4\omega_1^3\omega_3^2 -$
$36\omega_4c_s^2\omega_1^2\omega_2\omega_3^2 + 3v_1^2\omega_4\omega_1^3\omega_2^2\omega_3 + 18c_s^2\omega_1^2\omega_3^3\omega_3^2 - 4v_1^2\omega_4\omega_1\omega_2^2\omega_3^2 - 12\omega_4v_3^2\omega_3^2\omega_3^2 + \omega_4v_2^2\omega_1^2\omega_2^2\omega_3 - 12\omega_4\omega_1^3\omega_3^2 - 18\omega_4c_s^2\omega_1^3\omega_2^2 - 12\omega_4c_s^2\omega_1\omega_2^2\omega_3^2 +$
$18\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 + 3v_1^2\omega_1^3\omega_2^2\omega_3 - 4\omega_4\omega_1\omega_2^2\omega_3^2 + 4\omega_4v_2^2\omega_1^3\omega_3^2 + 18\omega_4c_s^2\omega_1^2\omega_3^2 - 3v_2^2\omega_1\omega_2^3\omega_3^2 - 6\omega_4\omega_1^3\omega_2^2\omega_3 - 3v_1^2\omega_1^3\omega_2^2\omega_3^2 + 20\omega_4c_s^2\omega_3^2\omega_3^2 - 18c_s^2\omega_1^2\omega_2^2\omega_3 +$
$6\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2 + 6\omega_1\omega_2^3\omega_3^2 - 2\omega_4\omega_1\omega_3^2\omega_3 - 3v_2^2\omega_1^3\omega_2^2\omega_3^2 + 20\omega_4\omega_2^2\omega_2\omega_3^2 - 3v_1^2\omega_1\omega_3^2\omega_3^2 - 18\omega_4c_s^2\omega_1\omega_2^3\omega_3^2 - 3\omega_4v_2^2\omega_1^2\omega_3^2\omega_3 - 3v_1^2\omega_4\omega_1\omega_3^2\omega_3^2 +$
$6\omega_1^3\omega_2^2\omega_3^2 - 2\omega_4v_2^2\omega_1^3\omega_2\omega_3 + 18c_s^2\omega_1^2\omega_2^2\omega_3^2 + 3v_2^2\omega_1^2\omega_3^3\omega_3^2 + 6\omega_4\omega_1^3\omega_2^2 + 6\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 - 12\omega_4\omega_1^2\omega_2^2\omega_3^2 + 28\omega_4c_s^2\omega_1^3\omega_3^2 - 6\omega_1^2\omega_2^3\omega_3^2 + v_1^2\omega_4\omega_1^2\omega_2^2\omega_3 +$
$3\omega_4v_2^2\omega_1^2\omega_3^2 - 4\omega_4v_2^2\omega_1\omega_2^2\omega_3^2 + 4\omega_4v_2^2\omega_3^2\omega_3^2 + 3\omega_4v_2^2\omega_1^3\omega_2\omega_3 + 3v_1^2\omega_1^2\omega_3^2\omega_3^2 + 6\omega_4\omega_1^2\omega_3\omega_3 - 18\omega_4c_s^2\omega_1^3\omega_2\omega_3^2 + 36\omega_4\omega_1v_3^2\omega_2^2\omega_3^2 + 4\omega_4\omega_1^3\omega_2\omega_3 -$
$3v_1^2\omega_4\omega_1^3\omega_2\omega_3^2 + 18c_s^2\omega_1^3\omega_2^2\omega_3 + \omega_4v_2^2\omega_1\omega_3^2\omega_3 - 3v_1^2\omega_4\omega_1^3\omega_2^2 - 4\omega_4v_2^2\omega_1^2\omega_2\omega_3^2 + 4v_1^2\omega_4\omega_2^3\omega_3^2 - 2v_1^2\omega_4\omega_1^3\omega_2\omega_3 - 18c_s^2\omega_1^3\omega_2^2\omega_3^2 + 3v_1^2\omega_4\omega_1^2\omega_3^2 -$
$6\omega_1^2\omega_2^2\omega_3^2 - 3\omega_4v_2^2\omega_1\omega_2^3\omega_3^2 - 3v_1^2\omega_4\omega_1^2\omega_2^3\omega_3 - 18\omega_4c_s^2\omega_1^2\omega_3^3\omega_3 - 3v_1^2\omega_1^2\omega_3^3\omega_3 - 36\omega_4\omega_1^2v_3^2\omega_2\omega_3^2 - 12\omega_4c_s^2\omega_1^3\omega_2\omega_3 + 6\omega_4\omega_1^3\omega_2\omega_3^2 + 3v_2^2\omega_1^2\omega_2^2\omega_3^2 -$
$3\omega_4v_2^2\omega_1^3\omega_2^2 + 6\omega_1^2\omega_3^3\omega_3 + 6v_1^2\omega_4\omega_1^2\omega_2^2\omega_3^2 - 18c_s^2\omega_1\omega_3^2\omega_3^2 - 3v_2^2\omega_1^2\omega_3^3\omega_3 - 4\omega_4\omega_3^3\omega_3^2 + 36\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 + 3v_1^2\omega_1^2\omega_2^2\omega_3^2 - 6\omega_4\omega_1^2\omega_3^2 - 2\omega_4\omega_1^2\omega_2^2\omega_3$

$C_{50} = -8\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 24\omega_4^2v_2^2\omega_3^2\omega_3^2 + 28\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 216\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 - 52\omega_4^2c_s^2\omega_1^3\omega_3^2 - 28\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3 - 102\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 +$
$8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 + 9\omega_4c_s^2\omega_1^3\omega_2^3\omega_3^2 + 54c_s^4\omega_1^3\omega_2^3\omega_3^2 - 119\omega_4^2c_s^4\omega_1^2\omega_3^3\omega_3^2 - 12\omega_4^2v_2^2\omega_1^2v_3^2\omega_2\omega_3^2 + 36c_s^2\omega_1^2\omega_3^2\omega_3^2 - 28\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 - 3\omega_4^2c_s^2\omega_1^3\omega_2^3\omega_3^2 +$
$108\omega_4c_s^4\omega_1^2\omega_3^2\omega_3^2 + 4\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 36\omega_4^2v_2^4\omega_1\omega_2^2\omega_3^2 + 28\omega_4^2c_s^2\omega_1\omega_2^3\omega_3 + 27\omega_4^2v_2^2\omega_1^2\omega_2^3\omega_3^2 + 96\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 - 20\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 +$
$66\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 + 4\omega_4^2\omega_2^3\omega_3^2 - 30\omega_4^2v_2^2\omega_1v_3^2\omega_3^2\omega_3^2 + 24\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 60\omega_4^2v_2^4\omega_3^2\omega_3^2 + 324\omega_4^2c_s^2v_2^2\omega_1\omega_3^2\omega_3^2 - 4\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3 - 4\omega_4^2\omega_1^3\omega_2\omega_3^2 +$
$72\omega_4^2c_s^4\omega_1^3\omega_3^2 + 9\omega_4^2c_s^2\omega_1^3\omega_3^3\omega_3 + 27\omega_4^2v_2^4\omega_1^3\omega_2^2\omega_3^2 - 4\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2 - 58\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2 + 16\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 + 138\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 - 12\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 -$
$48\omega_4^2v_2^2\omega_1v_3^2\omega_2^2\omega_3^2 - 24\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2 + 108\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3 - 24\omega_4^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 16\omega_4^2c_s^2v_2^2\omega_3^2\omega_3^2 - 30\omega_4^2v_2^2\omega_1^3v_3^2\omega_2\omega_3^2 + 72\omega_4^2v_2^4\omega_1\omega_3^2\omega_3^2 -$
$25\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 + 4\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3^2 - 4\omega_4^2\omega_1^3v_3^2\omega_3^2 + 36\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 4\omega_4^2\omega_1\omega_3^2\omega_3^2 - 324\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2 + 4\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 +$
$3\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 + 12\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 - 72\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 - 36c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 138\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 + 49\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 - 18c_s^2\omega_1^3\omega_3^2\omega_3^2 +$
$36\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3 - 72\omega_4^2c_s^4\omega_1^2\omega_3^3 + 74\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 + 4\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 + 24\omega_4^2v_2^4\omega_1^3\omega_3^2 - 27\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 - 84\omega_4^2c_s^4\omega_1\omega_3^2\omega_3 +$
$12\omega_4^2v_2^2\omega_1\omega_2^2\omega_3^2 + 12\omega_4^2c_s^2\omega_1^3\omega_2^2 + 15\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 - 108c_s^4\omega_1^2\omega_2^3\omega_3^2 - 36\omega_4^2v_2^4\omega_1^3\omega_2\omega_3^2 - 4\omega_4^2v_3^2\omega_2^3\omega_3^2 - 32\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 27\omega_4^2v_2^4\omega_1^2\omega_3^2\omega_3^2 +$
$16\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 4\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 + 54\omega_4^2c_s^4\omega_1^3\omega_2^2 - 16\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 36\omega_4^2v_2^2v_3^2\omega_3^2\omega_3^2 + 32\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 + 18\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2 + 8\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 +$
$20\omega_4^2c_s^2\omega_3^2\omega_3^2 + 78\omega_4^2c_s^4\omega_1\omega_3^2\omega_3^2 - 48\omega_4^2v_2^2\omega_1^3\omega_3^2 - 4\omega_4^2\omega_1\omega_2^2\omega_3^2 - 216\omega_4^2c_s^2v_2^2\omega_3^2\omega_3^2 - 27\omega_4^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 24\omega_4^2c_s^2\omega_1^2\omega_3^2 - 27\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 -$
$36\omega_4^2v_2^4\omega_1^2\omega_2^2\omega_3^2 - 36\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3 + 18c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 + 4\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 + 4\omega_4^2\omega_1^3\omega_3^2 - 32\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 4\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 - 36\omega_4^2c_s^4\omega_3^2\omega_3^2 -$
$9\omega_4c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 - 4\omega_4^2\omega_1^2\omega_2\omega_3^2 + 35\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 - 9\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2\omega_3 - 42\omega_4^2v_2^2\omega_1\omega_3^2\omega_3^2 + 60\omega_4^2v_2^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 12\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2 + 24\omega_4^2v_2^2\omega_1^3v_3^2\omega_3^2$

$C_{51} = -18c_s^2\omega_1^3\omega_2 - 9\omega_1v_3^2\omega_3^2\omega_3 - 23\omega_1^3\omega_2^2\omega_3 + 12v_3^2\omega_3^2\omega_3 + 50v_2^2\omega_1^3\omega_2^2\omega_3 - 12\omega_1^2v_3^2\omega_2\omega_3 + 12\omega_1^3v_3^2\omega_3 + 36c_s^2\omega_1^2\omega_2^2 - 60\omega_1\omega_3^2\omega_3 + 6\omega_1\omega_3^2 +$
$141v_2^2\omega_1\omega_2^3\omega_3 + 6v_2^2\omega_1^2\omega_2\omega_3 + 12\omega_1^2v_3^2\omega_2^2 - 9\omega_1^3v_3^2\omega_2\omega_3 - 42c_s^2\omega_1^2\omega_2^3\omega_3 + 6\omega_1^2\omega_2\omega_3 - 12\omega_1v_3^2\omega_2^2\omega_3 - 108c_s^2\omega_1^3\omega_2\omega_3 + 60v_2^2\omega_1\omega_2^2\omega_3 - 12\omega_1\omega_2^2\omega_3 +$
$48v_2^2\omega_1^3\omega_3 - 36\omega_1^3\omega_3 - 66c_s^2\omega_3^3\omega_3 - 6\omega_1^3v_3^2\omega_2 + 108c_s^2\omega_1\omega_3^3\omega_3 + 84c_s^2\omega_1^3\omega_3 + 42\omega_2^3\omega_3 - 114v_2^2\omega_2^3\omega_3 - 66v_2^2\omega_1^2\omega_2^2\omega_3 - 6\omega_1v_3^2\omega_2^3 + 42c_s^2\omega_1^3\omega_2^2\omega_3 +$
$12\omega_1^2\omega_2^2\omega_3 + 18\omega_1^2v_3^2\omega_2^2\omega_3 + 6\omega_1^3\omega_2 - 18c_s^2\omega_1\omega_2^3 + 23\omega_1^2\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2\omega_3 + 48\omega_1^3\omega_2\omega_3 - 12\omega_1^2\omega_2^2 - 50v_2^2\omega_1^2\omega_2^3\omega_3 - 75v_2^2\omega_1^3\omega_2\omega_3$

$C_{52} = 56\omega_4c_s^4\omega_1^2\omega_2^2\omega_3 - 144\omega_4v_2^2\omega_1v_3^2\omega_2^2\omega_3^2 + 9\omega_4v_2^2\omega_1^2\omega_2^3\omega_3^2 + 24\omega_4v_2^4\omega_1^3\omega_3^2 + 30\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 66\omega_4v_2^2\omega_1^3\omega_2\omega_3^2 - 68\omega_4c_s^4\omega_2^3\omega_3^2 +$
$54c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 - 18v_2^4\omega_1^2\omega_2^3\omega_3^2 - 90\omega_4v_2^2\omega_1^3v_3^2\omega_2\omega_3^2 + 36\omega_4v_2^4\omega_1^3\omega_2^2\omega_3 + 216c_s^2\omega_1v_3^2\omega_3^2\omega_3^2 - 12\omega_4\omega_1^3v_3^2\omega_3^2 + \omega_4\omega_1^3v_3^4\omega_2^2\omega_3^2 + 18c_s^4\omega_1^3\omega_2^3\omega_3^2 +$
$48\omega_4c_s^2\omega_1v_3^2\omega_3^2\omega_3^2 + 18v_2^2\omega_1^3\omega_2^2\omega_3 - 4\omega_4\omega_1\omega_2^3\omega_3^2 - 8\omega_4c_s^2\omega_1\omega_2^3\omega_3 + 32\omega_4c_s^2\omega_1^2\omega_2\omega_3^2 + 12\omega_4v_2^4\omega_1\omega_2^2\omega_3^2 + 24\omega_4c_s^2\omega_1^3v_3^2\omega_2\omega_3 - 14\omega_4c_s^4\omega_1^3\omega_2\omega_3^2 +$
$72c_s^2\omega_1^2\omega_2^3\omega_3^2 + 150\omega_4c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 - 14\omega_4c_s^4\omega_1^2\omega_2^3\omega_3^2 + 54c_s^2v_2^2\omega_1\omega_2^3\omega_3^2 - 12\omega_4v_3^2\omega_3^2\omega_3^2 - 6\omega_4v_2^2\omega_1^2\omega_2^2\omega_3 + 4\omega_4\omega_1^3\omega_3^2 - \omega_4\omega_1^2v_3^4\omega_2^3\omega_3^2 -$
$24\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2 + 32\omega_4c_s^2\omega_1\omega_2^2\omega_3^2 + 12\omega_4v_2^4\omega_1^2\omega_2\omega_3^2 + 132\omega_4c_s^2v_2^2\omega_1^3\omega_3^2 + 6\omega_4v_2^4\omega_1\omega_2^3\omega_3 + 36\omega_4c_s^2\omega_1^3\omega_2^2\omega_3 - 48\omega_4c_s^2\omega_1^2v_3^2\omega_2\omega_3^2 -$
$84\omega_4c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 - 4\omega_4\omega_1\omega_2^2\omega_3^2 - 48\omega_4v_2^2\omega_1^3\omega_3^2 + 54\omega_4v_2^4\omega_1\omega_2^3\omega_3^2 - 18v_2^2\omega_1\omega_2^3\omega_3^2 + 28\omega_4c_s^2\omega_2^3\omega_3^2 - 2\omega_4c_s^2\omega_1^3\omega_2^2\omega_3^2 + 8\omega_4c_s^4\omega_1^3\omega_2\omega_3 -$
$6\omega_4c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 - 18v_2^4\omega_1^2\omega_2^2\omega_3^2 - 18\omega_4c_s^2v_2^2\omega_1\omega_2^3\omega_3 - 12\omega_4c_s^2v_2^2\omega_1^2\omega_2\omega_3^2 - 42\omega_4v_2^2\omega_1^2\omega_2^2\omega_3^2 - 90\omega_4v_2^2\omega_1v_3^2\omega_3^2\omega_3^2 - 36\omega_4c_s^4\omega_1^2\omega_2^3\omega_3 -$
$\omega_4\omega_1^3v_3^2\omega_2^2\omega_3^2 - 96\omega_4c_s^2v_3^2\omega_3^2\omega_3^2 + 72c_s^4\omega_1\omega_2^3\omega_3^2 + 9\omega_4v_2^4\omega_1^3\omega_2^2\omega_3^2 - 18\omega_4c_s^2\omega_1^3\omega_3^2\omega_3 + 60\omega_4c_s^2\omega_1v_3^2\omega_3^2\omega_3 - 18v_2^2\omega_1^3\omega_2^2\omega_3^2 - 4\omega_4\omega_1^2\omega_2\omega_3^2 +$
$\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2 + 12\omega_4c_s^2\omega_1^3v_3^2\omega_3^2 - 18\omega_4c_s^2\omega_1\omega_3^2\omega_3^2 + 36\omega_4v_2^2\omega_1^2\omega_2^3\omega_3 + 28\omega_4c_s^4\omega_1^2\omega_2^2\omega_3^2 + 90\omega_4c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 54c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 + 12\omega_4v_2^2\omega_1^3\omega_2\omega_3 +$
$18v_2^4\omega_1^2\omega_3^3\omega_3 - 12\omega_4c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 - 36\omega_4v_2^2\omega_1^2v_3^2\omega_2\omega_3^2 - 6\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 36\omega_4v_2^4\omega_1^3\omega_2\omega_3^2 + 18v_2^2\omega_1^2\omega_3^2\omega_3^2 - 9\omega_4v_2^4\omega_1^2\omega_3^2\omega_3^2 -$
$56\omega_4c_s^2\omega_1^2\omega_2^2\omega_3 + 8\omega_4\omega_1^2\omega_2^2\omega_3^2 - 216c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 18v_2^4\omega_1^3\omega_2^2\omega_3 - 20\omega_4c_s^2\omega_1^3\omega_3^2 - 36\omega_4c_s^2v_2^2\omega_1^3\omega_2\omega_3 - 18c_s^2\omega_1^3\omega_3^2\omega_3^2 - 18\omega_4v_2^2\omega_1^2\omega_3^2 +$
$36\omega_4v_2^2\omega_1\omega_2^2\omega_3^2 + 54c_s^2v_2^2\omega_1^2\omega_3^2\omega_3 - 28\omega_4c_s^4\omega_1^2\omega_2\omega_3^2 - 54\omega_4c_s^2v_2^2\omega_1^3\omega_2^2 + 8\omega_4c_s^4\omega_1\omega_3^2\omega_3 + 180\omega_4v_2^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 90\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 +$
$54\omega_4c_s^2\omega_1^3v_3^2\omega_3^2\omega_3 + 12\omega_4v_2^2\omega_3^2\omega_3^2 - 36\omega_4v_2^2\omega_1^3\omega_2^2\omega_3 - 3\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 + 6\omega_4v_2^4\omega_1^2\omega_2^2\omega_3 + 2\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 - 18\omega_4v_2^4\omega_1^3\omega_2^2 + 18\omega_4c_s^2\omega_1^3\omega_2\omega_3^2 +$
$12\omega_4\omega_1v_3^2\omega_2^2\omega_3^2 + 132\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 - 72c_s^4\omega_1^2\omega_3^2\omega_3^2 + 24\omega_4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 + 6\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 36\omega_4c_s^4\omega_1^3\omega_2^2\omega_3 + 12\omega_4\omega_1^3v_3^2\omega_2\omega_3^2 -$
$6\omega_4v_2^2\omega_1\omega_3^3\omega_3 - 54c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 28\omega_4c_s^4\omega_1\omega_2^2\omega_3^2 + 54\omega_4c_s^2v_2^2\omega_1^2\omega_2\omega_3 + 18v_2^4\omega_1\omega_3^2\omega_3^2 + 2\omega_4c_s^4\omega_1^3\omega_2^2\omega_3^2 - 90\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 +$
$72\omega_4v_2^2\omega_1^3v_3^2\omega_3^2 - 24\omega_4v_2^2\omega_1\omega_3^2\omega_3^2 + 36\omega_4c_s^2\omega_1^2\omega_3^3\omega_3 + 18\omega_4v_2^4\omega_1^2\omega_2^2 - 18\omega_4v_2^4\omega_1^2\omega_2^2\omega_3^2 + 16\omega_4c_s^4\omega_1^3\omega_3^2 + 12\omega_4\omega_1^2v_3^2\omega_2\omega_3^2 - 48\omega_4v_2^4\omega_2^3\omega_3^2 +$
$66\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 8\omega_4c_s^2\omega_1^3\omega_2\omega_3 - 4\omega_4\omega_1^3\omega_2\omega_3^2 + 18v_2^2\omega_1^2\omega_2^2\omega_3^2 + 54\omega_4c_s^2v_2^2\omega_1^2\omega_3^3 - 174\omega_4c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 + 18\omega_4v_2^2\omega_1^3\omega_3^2 + 18v_2^4\omega_1^3\omega_2^2\omega_3^2 +$
$54c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 + 76\omega_4c_s^4\omega_1\omega_3^2\omega_3^2 - 54c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 - 72c_s^2\omega_1\omega_3^3\omega_3^2 - 108\omega_4c_s^2v_2^2\omega_3^2\omega_3^2 - 30\omega_4c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 + 18\omega_4c_s^4\omega_1^3\omega_3^2\omega_3 - 9\omega_4v_2^2\omega_1^3\omega_3^2\omega_3^2 -$
$12\omega_4v_2^4\omega_1^3\omega_2\omega_3 - 126\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3 + 12\omega_4\omega_1v_3^2\omega_3^2\omega_3^2 - 18v_2^2\omega_1^2\omega_3^3\omega_3 + 4\omega_4\omega_3^3\omega_3^2 - 36\omega_4c_s^2\omega_1^2\omega_2^2\omega_3^2 - 36\omega_4v_2^4\omega_1^2\omega_3^2\omega_3 + 108\omega_4v_2^2v_3^2\omega_3^2\omega_3^2$

$C_{53} = 8\omega_1\omega_2^2\omega_3^2 - 12c_s^2\omega_1^2\omega_3^2 + 4\omega_1^3\omega_3^2 + 4c_s^2\omega_1^2\omega_2^2\omega_3 + 20c_s^2\omega_3^3\omega_3^2 + 24c_s^4\omega_1\omega_3^2\omega_3 - 36c_s^4\omega_1^2\omega_2\omega_3^2 - 2v_1^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 108c_s^2\omega_1v_3^2\omega_3^2\omega_3^2 +$
$4v_1^2\omega_1^2\omega_2\omega_3^2 + 96v_1^2\omega_1v_3^2\omega_3^2\omega_3^2 + 5c_s^2\omega_1^2\omega_3^2\omega_3^2 - 4\omega_1^2\omega_2\omega_3^2 + 48v_3^4\omega_3^2\omega_3^2 + 56c_s^2\omega_1^3\omega_2\omega_3^2 + 48\omega_1v_3^2\omega_2^2\omega_3^2 + 54c_s^4\omega_1^3\omega_2^2\omega_3 - 36\omega_1v_3^4\omega_2^2\omega_3^2 +$
$12v_1^2c_s^2\omega_1^2\omega_3^2 - 36c_s^4\omega_1^3\omega_2^2 - 8v_1^2\omega_1\omega_2^2\omega_3^2 - 4v_1^2c_s^2\omega_1^3\omega_2\omega_3 - 20v_1^2c_s^2\omega_2^3\omega_3^2 + 24v_1^2\omega_1^2v_3^2\omega_2\omega_3^2 - 18v_1^2c_s^2\omega_1^2\omega_2^3\omega_3 + 84\omega_1^3v_3^2\omega_2\omega_3^2 + 36c_s^4\omega_1^2\omega_3^2 +$

$6c_s^4\omega_1^3\omega_2^2\omega_3^2 + 24v_1^2\omega_1v_3^2\omega_2^2\omega_3^2 - 12v_1^2c_s^2\omega_1^3\omega_2^2 - 20v_1^2c_s^2\omega_1^3\omega_2\omega_3^2 - 36c_s^4\omega_3^2\omega_3^2 - 216c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 + 8v_1^2\omega_2^3\omega_3^2 - v_1^2\omega_1^3\omega_2^2\omega_3^2 - 2v_1^2c_s^2\omega_1^2\omega_2^3\omega_3^2 -$
$24\omega_1^2v_3^2\omega_2\omega_3^2 - 48v_1^2\omega_1^3v_3^2\omega_2\omega_3^2 + 18c_s^2\omega_1^2\omega_2^3\omega_3 + 8\omega_1\omega_2^3\omega_3^2 - 48\omega_1^3v_3^2\omega_3^2 + 4c_s^2\omega_1^3\omega_2\omega_3 - 72v_1^2v_3^2\omega_3^3\omega_3^2 - 324c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 + 42c_s^4\omega_1\omega_2^3\omega_3^2 -$
$4v_1^2c_s^2\omega_1^2\omega_2^2\omega_3 + 24v_3^2\omega_2^3\omega_3^2 - 72\omega_1v_3^4\omega_2^2\omega_3^2 - 8v_1^2\omega_1\omega_2^3\omega_3^2 + 24v_1^2\omega_1^3v_3^2\omega_3^2 + 12c_s^2\omega_1^3\omega_2^2 - 60\omega_1v_3^2\omega_2^3\omega_3^2 - 36\omega_1^3v_3^4\omega_2\omega_3^2 + \omega_1^3\omega_2^2\omega_3^2 -$
$34c_s^2\omega_1^2\omega_2^2\omega_3^2 + 22v_1^2c_s^2\omega_1\omega_3^2\omega_3^2 - 24v_1^2\omega_1^2v_3^2\omega_3^3\omega_3^2 - 12c_s^4\omega_1^2\omega_2^2\omega_3 - 72c_s^2\omega_1^2v_3^2\omega_2^3\omega_3^2 - 4v_1^2\omega_1^3\omega_3^2 - \omega_1^2\omega_2^3\omega_3^2 + 72c_s^4\omega_1^3\omega_3^2 + 40c_s^2\omega_1^2\omega_2\omega_3^2 -$
$8c_s^2\omega_1\omega_3^3\omega_3 - 4\omega_1^3\omega_2\omega_3^2 + v_1^2\omega_1^2\omega_3^2\omega_3^2 + 2v_1^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 84c_s^4\omega_1^3\omega_2\omega_3^2 + 4v_1^2\omega_1^3\omega_2\omega_3^2 - 6c_s^4\omega_1^2\omega_2^3\omega_3^2 + 24v_1^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 8c_s^2\omega_1\omega_2^2\omega_3^2 -$
$24\omega_1^2v_3^2\omega_2^2\omega_3^2 + 72c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 18c_s^2\omega_1^2\omega_2^2\omega_3 - 5c_s^2\omega_1^3\omega_2^2\omega_3^2 - 4\omega_1^2\omega_2^2\omega_3^2 + 18v_1^2c_s^2\omega_1^3\omega_2^2\omega_3 - 52c_s^2\omega_1^3\omega_3^2 + 216c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 12c_s^4\omega_1^3\omega_2\omega_3 -$
$8\omega_2^3\omega_3^2 + 8v_1^2c_s^2\omega_1\omega_2^2\omega_3^2 - 24\omega_1^3v_3^2\omega_2^2\omega_3^2 - 54c_s^4\omega_1^2\omega_2^3\omega_3 - 48v_1^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 16v_1^2c_s^2\omega_1^3\omega_3^2 - 22c_s^2\omega_1\omega_2^2\omega_3^2 + 216c_s^2\omega_1^3v_3^2\omega_3^2 + 24\omega_1^2v_3^2\omega_2^2\omega_3^2 +$
$8v_1^2c_s^2\omega_1\omega_2^3\omega_3 - 4v_1^2c_s^2\omega_1^2\omega_2\omega_3^2 + 72\omega_1^2v_3^4\omega_2^2\omega_3^2 + 42c_s^4\omega_1^2\omega_2^2\omega_3^2 + 24\omega_1^3v_3^4\omega_3^2 + 4v_1^2\omega_1^2\omega_2^2\omega_3^2$

$C_{54} = 240\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 117\omega_4^2\omega_1^3v_3^4\omega_2^3\omega_3 - 32\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 117\omega_4\omega_1^3v_3^2\omega_3^2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^3\omega_3^2 + 72\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3 + 48v_1^2\omega_4^2\omega_2^2\omega_3^2 -$
$54\omega_4^2\omega_1^3v_3^2\omega_2^2 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 28\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 18\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2 + 576v_1^2\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 + 36\omega_4\omega_1^3v_3^4\omega_2^2\omega_3^2 + 180\omega_4\omega_1^2v_3^2\omega_3^2\omega_3 +$
$86\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3^2 - 72\omega_4^2\omega_1^2v_3^4\omega_2^3 + 40\omega_4^2\omega_1^2v_3^4\omega_3^2\omega_3^2 - 108\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3 + 24v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 + 36\omega_4^2\omega_1^3v_3^2\omega_2^2 + 48\omega_4^2\omega_1^3v_3^4\omega_3^2 + 6v_1^2\omega_4^2\omega_1^2\omega_3^2\omega_3^2 +$
$336\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 - 72\omega_4c_s^4\omega_1^2\omega_3^2\omega_3^2 + 38\omega_4^2\omega_1^3v_3^4\omega_2^2\omega_3^2 - 216\omega_4^2\omega_1^2v_3^2\omega_3^2\omega_3 + 64\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 + 24v_1^2\omega_4^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2c_s^2\omega_1\omega_3^2\omega_3 +$
$288\omega_4\omega_1^2v_3^4\omega_2^2\omega_3^2 + 36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3 + 36\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2 + 108\omega_4\omega_1^3v_3^4\omega_2^3\omega_3 + 40\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 + 144v_1^2\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 - 24\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2 -$
$60\omega_4^2\omega_1^2v_3^4\omega_2^2\omega_3 + 72v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3 - 492\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 - 16\omega_4^2\omega_2^3\omega_3^2 + 48v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 20\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 117\omega_4\omega_1^3v_3^4\omega_3^2\omega_3^2 -$
$72\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3 - 8\omega_4^2\omega_1^3\omega_2\omega_3^2 + 12v_1^2\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 - 144\omega_4^2\omega_1^2v_3^4\omega_2^2\omega_3^2 + 117\omega_4^2\omega_1^3v_3^2\omega_3^2\omega_3 + 144v_1^2\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 + 32\omega_4^2c_s^4\omega_1^3\omega_3^2 -$
$12v_1^2\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 2\omega_4^2\omega_1^2\omega_3^2\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 + 8\omega_4^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 108\omega_4^2\omega_1^3v_3^4\omega_2^2\omega_3 + 264\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2 - 36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3^2 -$
$180\omega_4\omega_1^2v_3^4\omega_2^2\omega_3 + 48\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2 + 264\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 - 288v_1^2\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 + 16\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 24v_1^2\omega_4^2c_s^2\omega_1^3\omega_3^2 - 216\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2 -$
$36\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3 - 288\omega_4\omega_1^2v_3^2\omega_3^2\omega_3^2 - 36\omega_4\omega_1^3v_3^4\omega_2^2\omega_3 + 432\omega_4^2c_s^2v_3^2\omega_3^2\omega_3^2 + 48v_1^2\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 - 86\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2 + 216\omega_4^2\omega_1^2v_3^4\omega_3^2\omega_3 -$
$72\omega_4c_s^2\omega_1\omega_3^2\omega_3^2 + 24\omega_4^2\omega_1^3v_3^4\omega_3^2\omega_3^2 + 60\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3 - 36\omega_4\omega_1^2v_3^4\omega_2^2\omega_3^2 - 108\omega_4\omega_1^3v_3^2\omega_3^2\omega_3 - 852\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3^2 + 24v_1^2\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 36\omega_4^2\omega_1^3v_3^4\omega_2^2 -$
$54\omega_1^3v_3^2\omega_3^2\omega_3^2 - 96\omega_4^2\omega_1^3v_3^2\omega_3^2 + 648\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 16\omega_4^2\omega_1\omega_3^2\omega_3^2 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 - 288\omega_4^2\omega_1v_3^4\omega_3^2\omega_3^2 + 204\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 + 72\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 -$
$12v_1^2\omega_4^2c_s^2\omega_1\omega_3^2\omega_3^2 + 16\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 - 144v_1^2\omega_4^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 324c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 36\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 + 80\omega_4^2c_s^4\omega_3^2\omega_3^2 + 468\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3 +$
$24v_1^2\omega_4^2\omega_1^2\omega_2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 144\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 + 324\omega_4c_s^2\omega_1^3v_3^2\omega_3^2\omega_3 + 18\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 + 96\omega_4^2\omega_1^2v_3^4\omega_2\omega_3^2 + 288\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 +$
$72\omega_4c_s^2\omega_1^2\omega_3^2\omega_3^2 + 2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 + 16\omega_4^2c_s^4\omega_1\omega_2^2\omega_3 - 56\omega_4^2c_s^4\omega_1^2\omega_2\omega_3^2 - 108\omega_1^2v_3^4\omega_3^2\omega_3^2 - 12v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3^2 - 6\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3^2 + 54\omega_4^2\omega_1^3v_3^4\omega_2^2 -$
$48v_1^2\omega_4^2\omega_1\omega_2^2\omega_3^2 - 48\omega_4^2v_3^2\omega_3^2\omega_3^2 + 24\omega_4^2\omega_1v_3^2\omega_3^2\omega_3 + 108\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 72\omega_4\omega_1v_3^4\omega_3^2\omega_3^2 + 144v_1^2\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 40\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3 + 72\omega_4^2\omega_1^2v_3^2\omega_3^2 -$
$492\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 24v_1^2\omega_4^2c_s^2\omega_3^2\omega_3^2 - 24\omega_4^2\omega_1^3v_3^4\omega_2\omega_3 + 96\omega_4^2\omega_1v_3^2\omega_3^2\omega_3^2 + 54\omega_1^3v_3^4\omega_3^2\omega_3^2 - 108\omega_4c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 - 6v_1^2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 - 12\omega_4^2c_s^2\omega_1^2\omega_2^2\omega_3^2 -$
$108\omega_4^2\omega_1^3v_3^4\omega_2\omega_3^2 - 108\omega_4^2c_s^2\omega_1^2v_3^2\omega_2^2\omega_3 + 162\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 + 48v_1^2\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 168\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 24v_1^2\omega_4^2\omega_1^3\omega_3^2 + 8\omega_4^2c_s^2\omega_3^2\omega_3^2 -$
$288v_1^2\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 172\omega_4^2c_s^4\omega_1\omega_2^3\omega_3^2 - 72v_1^2\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 108\omega_4c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 + 16\omega_4^2\omega_1\omega_2^2\omega_3^2 - 432v_1^2\omega_4^2v_3^2\omega_3^2\omega_3^2 + 96\omega_4^2\omega_1v_3^4\omega_2^2\omega_3^2 +$
$18\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 + 36\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3 + 162c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 + 72\omega_4c_s^4\omega_1\omega_3^2\omega_3^2 - 144\omega_4^2\omega_1^2v_3^2\omega_2\omega_3^2 + 8\omega_4^2\omega_1^3\omega_3^2 + 174\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 48v_1^2\omega_4^2\omega_1\omega_3^2\omega_3^2 -$
$16\omega_4^2c_s^2\omega_1^3\omega_2\omega_3 + 144v_1^2\omega_4^2\omega_1^3v_3^2\omega_3^2 + 108\omega_1^2v_3^2\omega_3^2\omega_3^2 - 297\omega_4c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 - 540\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3 + 72\omega_4\omega_1v_3^2\omega_3^2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2\omega_3^2 - 24\omega_4^2\omega_1v_3^4\omega_2^3\omega_3 +$
$192\omega_4^2v_3^4\omega_3^2\omega_3^2 - 2\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 297\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 - 96v_1^2\omega_4^2c_s^2\omega_1\omega_3^2\omega_3 + 24\omega_4^2\omega_1^3v_3^2\omega_2\omega_3 - 96v_1^2\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 - 108\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2$

$C_{55} = -18c_s^2\omega_1^3\omega_2 - 66\omega_1v_3^2\omega_3^2\omega_3 - 27c_s^2\omega_1^2\omega_3^2 - 5\omega_1^3\omega_2^2\omega_3 + 81c_s^2\omega_1^2\omega_2^2\omega_3 + 84v_3^2\omega_3^2\omega_3 + 27v_1^2\omega_1\omega_3^2\omega_3 - 12\omega_1^2v_3^2\omega_2\omega_3 + 48\omega_1^3v_3^2\omega_3 -$
$18c_s^2\omega_1^2\omega_2^2 + 3\omega_1\omega_2^3\omega_3 + 9v_1^2\omega_1^3\omega_2^2 - 12\omega_1\omega_2^3 + 5v_1^2\omega_1^3\omega_2^2\omega_3 - 24v_1^2\omega_2^3\omega_3 - 6v_1^2\omega_1^3\omega_2 + 6v_1^2\omega_1\omega_2^2\omega_3 - 9v_1^2\omega_1^2\omega_2^2 - 66\omega_1^3v_3^2\omega_2\omega_3 - 15c_s^2\omega_1^2\omega_3^2\omega_3 +$
$6\omega_1^2\omega_2\omega_3 - 120\omega_1v_3^2\omega_2^2\omega_3 - 108c_s^2\omega_1^3\omega_2\omega_3 - 6v_1^2\omega_1^2\omega_2^2 + 6v_1^2\omega_1^2\omega_2\omega_3 + 42\omega_1\omega_2^2\omega_3 + 27c_s^2\omega_1^3\omega_2^2 - 36\omega_1^3\omega_3 - 12c_s^2\omega_3^2\omega_3 - 9v_1^2\omega_1^2\omega_2^2\omega_3 +$
$27c_s^2\omega_1\omega_3^2\omega_3 + 84c_s^2\omega_1^3\omega_3 + 12v_1^2\omega_1\omega_3^2 - 12\omega_3^2\omega_3 - 9\omega_1^3\omega_2^2 + 15c_s^2\omega_1^3\omega_2^2\omega_3 - 51\omega_1^2\omega_2^2\omega_3 - 54c_s^2\omega_1\omega_2^2\omega_3 + 132\omega_1^2v_3^2\omega_2^2\omega_3 - 5v_1^2\omega_1^2\omega_2^3\omega_3 -$
$18v_1^2\omega_1^3\omega_2\omega_3 + 6\omega_1^3\omega_2 + 9\omega_1^2\omega_2^2 + 36c_s^2\omega_1\omega_3^2 + 12v_1^2\omega_1^3\omega_3 + 5\omega_1^2\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2\omega_3 + 48\omega_1^3\omega_2\omega_3 + 6\omega_1^2\omega_2^2$

$C_{56} = -4v_2^2\omega_1^3\omega_3^2 + 8\omega_1\omega_2^2\omega_3^2 - 12c_s^2\omega_1^2\omega_2^3 + 4\omega_1^3\omega_3^2 + 2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 24v_2^2\omega_1v_3^2\omega_2^2\omega_3^2 + 4c_s^2\omega_1^2\omega_2^2\omega_3 + 20c_s^2\omega_3^2\omega_3^2 - 12c_s^2v_2^2\omega_1^2\omega_2^2 +$
$24c_s^4\omega_1\omega_3^2\omega_3 - 8v_2^2\omega_1\omega_2^2\omega_3^2 - 36c_s^4\omega_1^2\omega_2\omega_3^2 + 108c_s^2\omega_1v_3^2\omega_3^2\omega_3^2 - 48v_2^2\omega_1^3v_3^2\omega_2\omega_3^2 + 5c_s^2\omega_1^2\omega_3^2\omega_3^2 - 4\omega_1^2\omega_2\omega_3^2 + 22c_s^2v_2^2\omega_1\omega_3^2\omega_3^2 + 48v_3^4\omega_3^2\omega_3^2 +$
$56c_s^2\omega_1^3\omega_2\omega_3^2 + 48\omega_1v_3^2\omega_2^2\omega_3^2 + 54c_s^4\omega_1^3\omega_2^2\omega_3 - 36\omega_1v_3^4\omega_3^2\omega_3^2 - 36c_s^4\omega_1^3\omega_2^2 + 4v_2^2\omega_1^2\omega_2\omega_3^2 + 84\omega_1^3v_3^2\omega_2\omega_3^2 + 36c_s^4\omega_1^2\omega_3^2 + 6c_s^4\omega_1^3\omega_2^2\omega_3^2 -$
$8v_2^2\omega_1\omega_3^2\omega_3^2 + 24v_2^2\omega_1^3v_3^2\omega_3^2 - 36c_s^4\omega_3^2\omega_3^2 - 216c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 - 24\omega_1^2v_3^2\omega_2\omega_3^2 + 96v_2^2\omega_1v_3^2\omega_3^2\omega_3^2 + 18c_s^2\omega_1^2\omega_3^2\omega_3 + 8\omega_1\omega_3^2\omega_3^2 + 8c_s^2v_2^2\omega_1\omega_3^2\omega_3 -$
$48\omega_1^3v_3^2\omega_3^2 - 4c_s^2v_2^2\omega_1^2\omega_2\omega_3^2 + 4c_s^2\omega_1^3\omega_2\omega_3 - 324c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 + 42c_s^4\omega_1\omega_3^2\omega_3^2 + 12c_s^2v_2^2\omega_1^2\omega_3^2 + 24v_3^2\omega_3^2\omega_3^2 - v_2^2\omega_1^3\omega_2^2\omega_3^2 - 72\omega_1v_3^4\omega_2^2\omega_3^2 -$
$20c_s^2v_2^2\omega_3^2\omega_3^2 + 12c_s^2\omega_1^3\omega_2^2 + 8c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 + 24v_2^2\omega_1^2v_3^2\omega_2\omega_3^2 - 60\omega_1v_3^2\omega_3^2\omega_3^2 - 36\omega_1^3v_3^4\omega_2\omega_3^2 + 18c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 72v_2^2v_3^2\omega_3^2\omega_3^2 + \omega_1^3\omega_2^2\omega_3^2 -$
$34c_s^2\omega_1^2\omega_2^2\omega_3^2 + v_2^2\omega_1^2\omega_3^2\omega_3^2 - 12c_s^4\omega_1^2\omega_2^2\omega_3 - 72c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 4v_2^2\omega_1^3\omega_2\omega_3^2 - \omega_1^2\omega_3^2\omega_3^2 - 48v_2^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 18c_s^2v_2^2\omega_1^2\omega_3^2\omega_3 + 72c_s^4\omega_1^3\omega_3^2 +$
$40c_s^2\omega_1^2\omega_2\omega_3^2 - 8c_s^2\omega_1\omega_3^2\omega_3 - 4c_s^2v_2^2\omega_1^3\omega_2\omega_3 - 4\omega_1^3\omega_2\omega_3^2 - 84c_s^4\omega_1^3\omega_2\omega_3^2 - 6c_s^4\omega_1^2\omega_3^2\omega_3^2 - 8c_s^2\omega_1\omega_2^2\omega_3^2 + 16c_s^2v_2^2\omega_1^3\omega_3^2 - 24\omega_1^2v_3^2\omega_3^2 +$
$72c_s^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 18c_s^3\omega_1^2\omega_2\omega_3 - 2c_s^2v_2^2\omega_1^2\omega_2^2\omega_3^2 - 5c_s^2\omega_1^3\omega_2^2\omega_3^2 - 4c_s^2v_2^2\omega_1^2\omega_2^2\omega_3 - 24v_2^2\omega_1^2v_3^2\omega_3^2\omega_3^2 - 4\omega_1^2\omega_2^2\omega_3^2 - 52c_s^2\omega_1^3\omega_3^2 + 216c_s^2\omega_1^2v_3^2\omega_2^2\omega_3^2 -$
$12c_s^4\omega_1^3\omega_2\omega_3 - 8\omega_2^3\omega_3^2 - 24\omega_1^3v_3^2\omega_2^2\omega_3^2 - 54c_s^4\omega_1^2\omega_3^2\omega_3 + 8v_2^2\omega_3^2\omega_3^2 + 4v_2^2\omega_1^2\omega_2^2\omega_3^2 - 2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 - 22c_s^2\omega_1\omega_3^2\omega_3^2 + 216c_s^2\omega_1^3v_3^2\omega_3^2 +$
$24\omega_1^2v_3^2\omega_3^2\omega_3^2 - 20c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 + 72\omega_1^2v_3^4\omega_2^2\omega_3^2 + 42c_s^4\omega_1^2\omega_2^2\omega_3^2 + 24v_2^2\omega_1^3v_3^2\omega_2^2\omega_3^2 + 24\omega_1^3v_3^4\omega_3^2$

$C_{57} = 240\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3^2 - 117\omega_4^2\omega_1^3v_3^4\omega_2^3\omega_3 + 48\omega_4^2v_2^2\omega_3^2\omega_3^2 - 32\omega_4^2c_s^2\omega_1\omega_2^2\omega_3^2 + 117\omega_4\omega_1^3v_3^2\omega_2^2\omega_3^2 + 24\omega_4^2c_s^2v_2^2\omega_1^3\omega_3^2 - 40\omega_4^2c_s^2\omega_1^3\omega_3^2 +$
$72\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3 - 54\omega_4^2\omega_1^3v_3^2\omega_3^2 + 36\omega_4^2c_s^2\omega_1^3\omega_2^2\omega_3 - 72\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3 - 28\omega_4^2c_s^4\omega_1^3\omega_2\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2^2\omega_3^2 - 18\omega_4c_s^2\omega_1^3\omega_3^2\omega_3^2 + 48\omega_4^2c_s^2v_2^2\omega_1\omega_2^2\omega_3^2 +$
$36\omega_4\omega_1^3v_3^4\omega_2^2\omega_3^2 + 180\omega_4\omega_1^2v_3^2\omega_3^2\omega_3 + 86\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3^2 - 72\omega_4^2\omega_1^2v_3^4\omega_3^2 + 144\omega_4^2v_2^2\omega_1^2v_3^2\omega_2\omega_3^2 + 40\omega_4^2\omega_1^2v_3^4\omega_3^2\omega_3^2 - 108\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3 +$
$36\omega_4^2\omega_1^3v_3^2\omega_2^2 + 48\omega_4^2\omega_1^3v_3^4\omega_3^2 + 336\omega_4^2c_s^2\omega_1v_3^2\omega_2^2\omega_3^2 - 72\omega_4c_s^4\omega_1^2\omega_3^2\omega_3^2 + 38\omega_4^2\omega_1^3v_3^4\omega_2^2\omega_3^2 - 216\omega_4^2\omega_1^2v_3^2\omega_3^2\omega_3 + 64\omega_4^2c_s^2\omega_1^2\omega_2\omega_3^2 - 16\omega_4^2c_s^2\omega_1\omega_3^2\omega_3 +$
$288\omega_4\omega_1^2v_3^4\omega_2^3\omega_3^2 + 36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3 + 36\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2 + 108\omega_4\omega_1^3v_3^4\omega_3^2\omega_3 - 96\omega_4^2c_s^2v_2^2\omega_1\omega_3^2\omega_3 + 6\omega_4^2v_2^2\omega_1^2\omega_3^2\omega_3^2 + 40\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3 -$
$96\omega_4^2c_s^2v_2^2\omega_1^2\omega_2\omega_3^2 - 24\omega_4^2\omega_1^3v_3^2\omega_3^2\omega_3^2 - 60\omega_4^2\omega_1^2v_3^4\omega_3^2\omega_3 - 492\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3^2 + 24\omega_4^2v_2^2\omega_1^3\omega_2\omega_3^2 - 16\omega_4^2\omega_3^2\omega_3^2 + 576\omega_4^2v_2^2\omega_1v_3^2\omega_3^2\omega_3^2 +$
$20\omega_4^2c_s^4\omega_1^2\omega_2^2\omega_3^2 - 117\omega_4\omega_1^3v_3^4\omega_3^2\omega_3^2 - 12\omega_4^2c_s^2v_2^2\omega_1\omega_3^2\omega_3^2 - 72\omega_4^2c_s^2\omega_1^3v_3^2\omega_2\omega_3 - 8\omega_4^2\omega_1^3\omega_2\omega_3^2 - 144\omega_4^2\omega_1^2v_3^4\omega_2^2\omega_3^2 + 117\omega_4^2\omega_1^3v_3^2\omega_3^2\omega_3 + 32\omega_4^2c_s^4\omega_1^3\omega_3^2 -$
$2\omega_4^2\omega_1^2\omega_3^2\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2\omega_3 + 8\omega_4^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 108\omega_4^2\omega_1^3v_3^4\omega_2^2\omega_3 + 264\omega_4^2c_s^2\omega_1^2v_3^2\omega_2\omega_3^2 - 36\omega_4\omega_1^3v_3^2\omega_2^2\omega_3^2 - 180\omega_4\omega_1^2v_3^4\omega_3^2\omega_3 + 48\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3 +$
$264\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2 - 12\omega_4^2c_s^2v_2^2\omega_1^3\omega_2^2\omega_3^2 + 16\omega_4^2c_s^4\omega_1^3\omega_2\omega_3 + 144\omega_4^2v_2^2\omega_1v_3^2\omega_2^2\omega_3^2 - 216\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2 - 36\omega_4^2c_s^4\omega_1^2\omega_3^2\omega_3 + 24\omega_4^2v_2^2\omega_1^2\omega_3^2\omega_3^2 -$
$288\omega_4\omega_1^2v_3^2\omega_2^2\omega_3^2 - 36\omega_4\omega_1^3v_3^4\omega_2^2\omega_3 + 432\omega_4^2c_s^2v_3^2\omega_3^2\omega_3^2 - 86\omega_4^2\omega_1^3v_3^2\omega_2^2\omega_3^2 + 216\omega_4^2\omega_1^2v_3^4\omega_3^2\omega_3 - 72\omega_4c_s^2\omega_1\omega_3^2\omega_3^2 + 24\omega_4^2\omega_1^3v_3^4\omega_3^2\omega_3^2 +$
$60\omega_4^2\omega_1^2v_3^2\omega_2^2\omega_3 - 36\omega_4\omega_1^3v_3^4\omega_2^2\omega_3^2 - 108\omega_4\omega_1^3v_3^2\omega_3^2\omega_3 - 288\omega_4^2v_2^2\omega_1^3v_3^2\omega_2\omega_3^2 - 852\omega_4^2c_s^2\omega_1v_3^2\omega_3^2\omega_3 - 36\omega_4^2\omega_1^3v_3^4\omega_2^2 - 54\omega_1^3v_3^2\omega_3^2\omega_3 - 96\omega_4^2\omega_1^3v_3^2\omega_3^2 +$
$648\omega_4c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 16\omega_4^2\omega_1\omega_3^2\omega_3^2 - 12\omega_4^2c_s^2v_2^2\omega_1^3\omega_2\omega_3^2 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2\omega_3 - 288\omega_4^2\omega_1v_3^4\omega_3^2\omega_3^2 + 204\omega_4^2\omega_1^3v_3^2\omega_2\omega_3^2 + 72\omega_4^2c_s^2\omega_1^3v_3^2\omega_3^2\omega_3^2 +$
$24\omega_4^2v_2^2\omega_1^2\omega_2\omega_3^2 + 16\omega_4^2c_s^4\omega_1\omega_2^2\omega_3^2 - 324c_s^2\omega_1^2v_3^2\omega_3^2\omega_3^2 + 12\omega_4^2c_s^2v_2^2\omega_1^2\omega_3^2\omega_3^2 + 144\omega_4^2v_2^2\omega_1^3v_3^2\omega_2^2\omega_3^2 - 36\omega_4^2c_s^2\omega_1^2\omega_3^2\omega_3^2 + 80\omega_4^2c_s^4\omega_3^2\omega_3^2 +$
$468\omega_4^2c_s^2\omega_1^2v_3^2\omega_3^2\omega_3 + 36\omega_4^2c_s^2\omega_1^3\omega_2\omega_3^2 - 144\omega_4^2\omega_1v_3^2\omega_2^2\omega_3^2 + 324\omega_4c_s^2\omega_1^3v_3^2\omega_3^2\omega_3 + 18\omega_4c_s^4\omega_1^3\omega_3^2\omega_3^2 + 96\omega_4^2\omega_1^2v_3^4\omega_2\omega_3^2 + 288\omega_4^2c_s^2\omega_1^3v_3^2\omega_2^2\omega_3 +$

$72\omega_4 c_s^2\omega_1^2\omega_2^3\omega_3^2 + 2\omega_4^2\omega_1^3\omega_2^2\omega_3^2 + 16\omega_4^2 c_s^4\omega_1\omega_3^3\omega_3 - 48\omega_4^2 v_2^2\omega_1\omega_2^2\omega_3^2 - 144\omega_4^2 v_2^2\omega_1^2 v_3^2\omega_2^3\omega_3^2 - 56\omega_4^2 c_s^4\omega_1^2\omega_2\omega_3^2 + 48\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_2^2\omega_3 - 108\omega_1^2 v_3^4\omega_2^3\omega_3^2 -$
$6\omega_4^2 c_s^4\omega_1^3\omega_3^3\omega_3^2 + 54\omega_4^2\omega_1^3 v_3^4\omega_3^2 - 48\omega_4^2 v_3^2\omega_2^3\omega_3^2 + 24\omega_4^2\omega_1 v_3^2\omega_2^3\omega_3 + 108\omega_4 c_s^2\omega_1^3 v_3^2\omega_2^2\omega_3^2 - 72\omega_4\omega_1 v_3^4\omega_3^2\omega_3^2 - 40\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3 + 72\omega_4^2\omega_1^2 v_3^2\omega_2^3 -$
$492\omega_4^2 c_s^2\omega_1^2 v_3^2\omega_2^2\omega_3^2 - 24\omega_4^2\omega_1^3 v_3^4\omega_2\omega_3 + 96\omega_4^2\omega_1 v_3^2\omega_2^3\omega_3^2 + 54\omega_1^3 v_3^4\omega_2^3\omega_3^2 - 108\omega_4 c_s^2\omega_1^3 v_3^2\omega_2^2\omega_3 - 12\omega_4^2 c_s^2\omega_1^2\omega_2^2\omega_3^2 - 108\omega_4^2\omega_1^3 v_3^4\omega_2\omega_3^2 -$
$432\omega_4^2 v_2^2 v_3^2\omega_2^3\omega_3^2 - 108\omega_4^2 c_s^2\omega_1^2 v_3^2\omega_2^2\omega_3 + 162\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_2^3 + 168\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_2^2\omega_3^2 + 8\omega_4^2 c_s^2\omega_2^3\omega_3^2 + 24\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_2^2\omega_3^2 - 172\omega_4^2 c_s^4\omega_1\omega_2^3\omega_3^2 -$
$24\omega_4^2 v_2^2\omega_1^3\omega_3^2 - 108\omega_4 c_s^2\omega_1^2 v_3^2\omega_2^2\omega_3^2 + 16\omega_4^2\omega_1\omega_2^2\omega_3^2 + 24\omega_4^2 c_s^2 v_2^2\omega_2^3\omega_3^2 - 6\omega_4^2 v_2^2\omega_1^3\omega_2^2\omega_3^2 + 96\omega_4^2\omega_1 v_3^4\omega_2^2\omega_3^2 + 18\omega_4^2 c_s^4\omega_1^3\omega_2^3\omega_3 + 36\omega_4^2 c_s^2\omega_1^2\omega_3^3\omega_3 +$
$162 c_s^2\omega_1^3 v_3^2\omega_3^3\omega_3^2 + 72\omega_4 c_s^4\omega_1\omega_3^3\omega_3^2 - 144\omega_4^2\omega_1^2 v_3^2\omega_2\omega_3^2 + 8\omega_4^2\omega_1^3\omega_3^2 + 174\omega_4^2 c_s^2\omega_1^2 v_3^2\omega_2^3\omega_3^2 - 16\omega_4^2 c_s^2\omega_1^3\omega_2\omega_3 + 108\omega_1^2 v_3^2\omega_2^3\omega_3^2 - 297\omega_4 c_s^2\omega_1^3 v_3^2\omega_2^3\omega_3^2 -$
$540\omega_4 c_s^2\omega_1^2 v_3^2\omega_2^3\omega_3 + 72\omega_4\omega_1 v_3^2\omega_2^3\omega_3^2 - 8\omega_4^2\omega_1^2\omega_2\omega_3^2 - 24\omega_4^2\omega_1 v_3^4\omega_3^2\omega_3 + 48\omega_4^2 c_s^2 v_2^2\omega_1^3\omega_2\omega_3 + 192\omega_4^2 v_3^4\omega_3^2\omega_3^2 - 2\omega_4^2 c_s^4\omega_1^3\omega_2^2\omega_3^2 -$
$297\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_2^3\omega_3 + 24\omega_4^2\omega_1^3 v_3^2\omega_2\omega_3 + 72\omega_4^2 c_s^2 v_2^2\omega_1^2\omega_3^2\omega_3 - 48\omega_4^2 v_2^2\omega_1\omega_2^3\omega_3^2 - 288\omega_4^2 v_2^2\omega_1^2 v_3^2\omega_2^2\omega_3^2 - 108\omega_4^2 c_s^2\omega_1^3 v_3^2\omega_2^2 + 144\omega_4^2 v_2^2\omega_1^3 v_3^2\omega_3^2$

$C_{58} = -18c_s^2\omega_1^3\omega_2 - 66\omega_1 v_3^2\omega_3^2\omega_3 - 27c_s^2\omega_1^2\omega_3^2 - 5\omega_1^3\omega_2^2\omega_3 + 81c_s^2\omega_1^2\omega_2^2\omega_3 + 84v_3^2\omega_3^2\omega_3 + 5v_2^2\omega_1^3\omega_2^2\omega_3 - 12\omega_1^2 v_3^2\omega_2\omega_3 + 48\omega_1^3 v_3^2\omega_3 -$
$18c_s^2\omega_1^2\omega_2^2 + 3\omega_1\omega_3^2\omega_3 + 12v_2^2\omega_1\omega_2^3 - 12\omega_1\omega_2^3 + 27v_2^2\omega_1\omega_3^2\omega_3 + 6v_2^2\omega_1^2\omega_2\omega_3 - 66\omega_1^3 v_3^2\omega_2\omega_3 - 15c_s^2\omega_1^2\omega_3^2\omega_3 + 6\omega_1^2\omega_2\omega_3 - 120\omega_1 v_3^2\omega_2^2\omega_3 -$
$108c_s^2\omega_1^3\omega_2\omega_3 + 6v_2^2\omega_1\omega_2^2\omega_3 + 42\omega_1\omega_2^2\omega_3 + 27c_s^2\omega_1^3\omega_2^2 + 12v_2^2\omega_1^3\omega_3 - 36\omega_1^3\omega_3 - 12c_s^2\omega_2^3\omega_3 + 27c_s^2\omega_1\omega_2^3\omega_3 + 9v_2^2\omega_1^3\omega_2^2 + 84c_s^2\omega_1^3\omega_3 - 12\omega_3^3\omega_3 -$
$9\omega_1^3\omega_2^2 - 24v_2^2\omega_3^2\omega_3 - 9v_2^2\omega_1^2\omega_2^2\omega_3 + 15c_s^2\omega_1^3\omega_2^2\omega_3 - 51\omega_1^2\omega_2^2\omega_3 - 54c_s^2\omega_1\omega_2^2\omega_3 + 132\omega_1^2 v_3^2\omega_2^2\omega_3 - 6v_2^2\omega_1^3\omega_2 - 9v_2^2\omega_1^2\omega_2^2 + 6\omega_1^3\omega_2 + 9\omega_1^2\omega_2^2 +$
$36c_s^2\omega_1\omega_2^3 + 5\omega_1^2\omega_2^3\omega_3 - 18c_s^2\omega_1^2\omega_2\omega_3 + 48\omega_1^3\omega_2\omega_3 + 6\omega_1^2\omega_2^2 - 5v_2^2\omega_1^2\omega_2^3\omega_3 - 6v_2^2\omega_1^2\omega_2^2 - 18v_2^2\omega_1^3\omega_2\omega_3$

$C_{59} = -8c_s^2\omega_1^3\omega_2 + 328\omega_1 v_3^2\omega_3^2\omega_3 + 8\omega_1^3\omega_2^2\omega_3 - 84\omega_1^3 v_3^4\omega_2\omega_3 + 152c_s^2\omega_1^2\omega_2^2\omega_3 - 372c_s^4\omega_1\omega_3^3\omega_3 + 168\omega_1 v_3^4\omega_2^2\omega_3 - 160v_3^2\omega_3^3\omega_3 + 8c_s^2\omega_1 v_3^2\omega_2^3 -$
$104\omega_1^2 v_3^2\omega_2\omega_3 - 28\omega_1^3 v_3^2\omega_3 + 16c_s^2\omega_1^2\omega_2^2 - 28\omega_1\omega_2^3\omega_3 - 464c_s^2\omega_1^3 v_3^2\omega_2\omega_3 + 82c_s^4\omega_1^3\omega_2^2\omega_3 + 216c_s^4\omega_2^3\omega_3 + 8c_s^2\omega_1^3 v_3^2\omega_2 + 656c_s^2\omega_1 v_3^2\omega_2^2\omega_3 +$
$440c_s^2\omega_1^2 v_3^2\omega_2\omega_3 - 300\omega_1 v_3^4\omega_2^3\omega_3 + 24c_s^4\omega_1^3\omega_2 + 72c_s^4\omega_1\omega_2^2\omega_3 + 94\omega_1^3 v_3^2\omega_2\omega_3 - 3\omega_1^3\omega_2^3\omega_3 - 156c_s^2\omega_1^2\omega_2^3\omega_3 + 8\omega_1^2\omega_2\omega_3 - 176\omega_1 v_3^2\omega_2^2\omega_3 +$
$122c_s^2\omega_1^3\omega_2\omega_3 + 144v_3^4\omega_3^2\omega_3 + 72c_s^4\omega_1^2\omega_2\omega_3 - 1472c_s^2\omega_1 v_3^2\omega_3^2\omega_3 + 96\omega_1^2 v_3^4\omega_2\omega_3 - 15c_s^4\omega_1^3\omega_3^2\omega_3 - 48c_s^4\omega_1^2\omega_2^2 + 8\omega_1\omega_2^2\omega_3 + 4\omega_1^3\omega_3 -$
$184c_s^2\omega_3^2\omega_3 - 264\omega_1^2 v_3^4\omega_2^2\omega_3 - 120c_s^4\omega_1^2\omega_2^2\omega_3 + 24\omega_1^3 v_3^4\omega_3 - 102c_s^2\omega_1^3 v_3^2\omega_3^2\omega_3 + 160c_s^2\omega_1^3 v_3^2\omega_3 + 320c_s^2\omega_1\omega_2^3\omega_3 - 196\omega_1^2 v_3^2\omega_3^2\omega_3 - 52c_s^2\omega_1^3\omega_3 +$
$24c_s^4\omega_1\omega_2^2 + 16\omega_2^3\omega_3 - 1088c_s^2\omega_1^2 v_3^2\omega_2^2\omega_3 - 98\omega_1^3 v_3^2\omega_2^2\omega_3 + 760c_s^2 v_3^2\omega_2^3\omega_3 - 27\omega_1^3 v_3^4\omega_2^3\omega_3 - 78c_s^2\omega_1^3\omega_2^2\omega_3 - 16\omega_1^2\omega_2^2\omega_3 - 80c_s^2\omega_1\omega_2^2\omega_3 +$
$280\omega_1^2 v_3^2\omega_2^2\omega_3 + 404c_s^2\omega_1^3 v_3^2\omega_2^2\omega_3 - 156c_s^4\omega_1^3\omega_2\omega_3 + 180\omega_1^2 v_3^4\omega_2^3\omega_3 + 164c_s^4\omega_1^2\omega_2^3\omega_3 + 18c_s^2\omega_1^3\omega_2^3\omega_3 - 8c_s^2\omega_1\omega_2^3 + 72c_s^4\omega_1^3\omega_3 + 16\omega_1^2\omega_2^3\omega_3 -$
$80c_s^2\omega_1^2\omega_2\omega_3 - 10\omega_1^3\omega_2\omega_3 + 90\omega_1^3 v_3^4\omega_2^2\omega_3 + 30\omega_1^3 v_3^2\omega_2^3\omega_3 + 808c_s^2\omega_1^2 v_3^2\omega_2^3\omega_3 - 16c_s^2\omega_1^2 v_3^2\omega_2^2$

$C_{60} = -8c_s^2\omega_1^3\omega_2 + 552\omega_1 v_3^2\omega_3^2\omega_3 + 8\omega_1^3\omega_2^2\omega_3 - 312\omega_1^3 v_3^4\omega_2\omega_3 + 24c_s^2\omega_1^2\omega_2^2\omega_3 - 68c_s^4\omega_1\omega_3^2\omega_3 + 552\omega_1 v_3^4\omega_2^2\omega_3 - 288v_3^2\omega_3^2\omega_3 + 24c_s^2\omega_1 v_3^2\omega_3^2 -$
$168\omega_1^2 v_3^2\omega_2\omega_3 - 60\omega_1^3 v_3^2\omega_3 + 16c_s^2\omega_1^2\omega_2^2 - 28\omega_1\omega_3^2\omega_3 - 360c_s^2\omega_1^3 v_3^2\omega_2\omega_3 + 14c_s^4\omega_1^3\omega_2^2\omega_3 + 40c_s^4\omega_2^3\omega_3 + 24c_s^2\omega_1^3 v_3^2\omega_2 + 336c_s^2\omega_1 v_3^2\omega_2^2\omega_3 +$
$264c_s^2\omega_1^2 v_3^2\omega_2\omega_3 - 1068\omega_1 v_3^4\omega_3^2\omega_3 + 8c_s^4\omega_1^3\omega_2 + 8c_s^4\omega_1\omega_2^2\omega_3 + 174\omega_1^3 v_3^2\omega_2\omega_3 - 3\omega_1^3\omega_3^2\omega_3 - 44c_s^2\omega_1^2\omega_3^2\omega_3 + 8\omega_1^2\omega_2\omega_3 - 240\omega_1 v_3^2\omega_2^2\omega_3 +$
$42c_s^2\omega_1^3\omega_2\omega_3 + 528v_3^4\omega_3^2\omega_3 + 8c_s^4\omega_1^2\omega_2\omega_3 - 1008c_s^2\omega_1 v_3^2\omega_3^2\omega_3 + 336\omega_1^2 v_3^4\omega_2\omega_3 - 3c_s^4\omega_1^3\omega_3^2\omega_3 - 16c_s^4\omega_1^2\omega_2^2 + 8\omega_1\omega_2^2\omega_3 + 4\omega_1^3\omega_3 - 56c_s^2\omega_2^3\omega_3 -$
$888\omega_1^2 v_3^4\omega_2^2\omega_3 - 8c_s^4\omega_1^2\omega_2^2\omega_3 + 96\omega_1^3 v_3^4\omega_3 - 54c_s^2\omega_1^3 v_3^2\omega_2^3\omega_3 + 144c_s^2\omega_1^3 v_3^2\omega_3 + 96c_s^2\omega_1\omega_2^3\omega_3 - 308\omega_1^2 v_3^2\omega_3^2\omega_3 - 20c_s^2\omega_1^3\omega_3 + 8c_s^4\omega_1\omega_2^3 +$
$16\omega_2^3\omega_3 - 576c_s^2\omega_1^2 v_3^2\omega_2^2\omega_3 - 154\omega_1^3 v_3^2\omega_2^2\omega_3 + 552c_s^2 v_3^2\omega_2^3\omega_3 - 87\omega_1^3 v_3^4\omega_2^3\omega_3 - 22c_s^2\omega_1^3\omega_2^2\omega_3 - 16\omega_1^2\omega_2^2\omega_3 - 16c_s^2\omega_1\omega_2^2\omega_3 + 408\omega_1^2 v_3^2\omega_2^2\omega_3 +$
$252c_s^2\omega_1^3 v_3^2\omega_2^2\omega_3 - 32c_s^4\omega_1^3\omega_2\omega_3 + 620\omega_1^2 v_3^4\omega_3^2\omega_3 + 28c_s^4\omega_1^2\omega_3^2\omega_3 + 6c_s^2\omega_1^3\omega_2^3\omega_3 - 8c_s^2\omega_1\omega_2^3 + 16c_s^4\omega_1^3\omega_3 + 16\omega_1^2\omega_2^3\omega_3 - 16c_s^2\omega_1^2\omega_2\omega_3 -$
$10\omega_1^3\omega_2\omega_3 + 310\omega_1^3 v_3^4\omega_2^2\omega_3 + 42\omega_1^3 v_3^2\omega_2^3\omega_3 + 504c_s^2\omega_1^2 v_3^2\omega_2^3\omega_3 - 48c_s^2\omega_1^2 v_3^2\omega_2^2$

3 Comparison of SRT, MRT, CLBM, and CuLBM

3.1 Conservation of mass: ρ

$$\frac{\partial\rho}{\partial t} + v_1\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \rho\frac{\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + v_2\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \rho\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + v_3\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \rho\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-1+v_1^2+3c_s^2)\frac{v_1}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^3} +$$
$$(-1+3v_1^2+c_s^2)\frac{\rho}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+3c_s^2+v_2^2)\frac{v_2}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-1+c_s^2+3v_2^2)\frac{\rho}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2^3}$$
$$- \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+3c_s^2+v_3^2)\frac{v_3}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_3^3} +$$
$$(-1+c_s^2+3v_3^2)\frac{\rho}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + C^{(0)}_{\mathrm{D}_x^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C^{(0)}_{\mathrm{D}_x^4 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_y\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_y v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} +$$
$$C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} +$$
$$C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C^{(0)}_{\mathrm{D}_y^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C^{(0)}_{\mathrm{D}_y^4 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} +$$
$$C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C^{(0)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C^{(0)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} +$$
$$C^{(0)}_{\mathrm{D}_y^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C^{(0)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C^{(0)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C^{(0)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C^{(0)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} +$$
$$C^{(0)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C^{(0)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C^{(0)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C^{(0)}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} +$$
$$C^{(0)}_{\mathrm{D}_z^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C^{(0)}_{\mathrm{D}_z^4 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

coefficient $C^{(0)}_{\mathrm{D}^4_x\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^4}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^4_x\rho} = (-6v_1^2 + c_s^2\omega - 12c_s^2\omega v_1^2 + 24c_s^2v_1^2 + 2c_s^4 - 3\omega v_1^4 + 3\omega v_1^2 - c_s^4\omega - 2c_s^2 + 6v_1^4)\frac{1}{24\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x\rho} = (-6v_1^2 - c_s^4\omega_9 + 24c_s^2v_1^2 - 12c_s^2v_1^2\omega_9 + 2c_s^4 - 3v_1^4\omega_9 + c_s^2\omega_9 - 2c_s^2 + 6v_1^4 + 3v_1^2\omega_9)\frac{1}{24\omega_9}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^4_x\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^4_x\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^4_x\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^4_x\rho} = (-6v_1^2 - 12\omega_4c_s^2v_1^2 + \omega_4c_s^2 + 24c_s^2v_1^2 + 2c_s^4 - 3\omega_4v_1^4 + 3\omega_4v_1^2 - 2c_s^2 - \omega_4c_s^4 + 6v_1^4)\frac{1}{24\omega_4}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^4_x\rho} = (12v_1^4\omega_2 + 48c_s^2v_1^2\omega_2 - 36c_s^2\omega_1v_1^2\omega_2 + 2c_s^4\omega_1 + 6\omega_1v_1^4 + 24c_s^2\omega_1v_1^2 + 9\omega_1v_1^2\omega_2 + 4c_s^4\omega_2 - 3c_s^4\omega_1\omega_2 - 12v_1^2\omega_2 - 2c_s^2\omega_1 - 9\omega_1v_1^4\omega_2 - 4c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 6\omega_1v_1^2)\frac{1}{72\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^4_x v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^4}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 3c_s^2\omega + 2\omega - 5\omega v_1^2 + 6c_s^2)\frac{\rho v_1}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 3c_s^2\omega_9 + 6c_s^2 - 5v_1^2\omega_9 + 2\omega_9)\frac{\rho v_1}{12\omega_9}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^4_x v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^4_x v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 3\omega_4c_s^2 + 2\omega_4 - 5\omega_4v_1^2 + 6c_s^2)\frac{\rho v_1}{12\omega_4}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^4_x v_1} = (-15\omega_1v_1^2\omega_2 + 6\omega_1\omega_2 - 4\omega_1 + 20v_1^2\omega_2 + 6c_s^2\omega_1 - 8\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 + 10\omega_1v_1^2)\frac{\rho v_1}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x\mathrm{D}_y\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^3\partial x_2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = (-3c_s^2\omega_9 + 3c_s^2\omega_{12} + v_1^2\omega_{12} - v_1^2\omega_9 + \omega_9 - \omega_{12})\frac{v_1v_2}{4\omega_9\omega_{12}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = (\omega_1v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{v_1v_2}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x\mathrm{D}_y v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (-c_s^2\omega_9 + c_s^2\omega_{12} + 3v_1^2\omega_{12} - 3v_1^2\omega_9 + \omega_9 - \omega_{12})\frac{\rho v_2}{4\omega_9\omega_{12}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{\rho v_2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (2 - 2v_1^2 + 3c_s^2\omega - \omega + \omega v_1^2 - 6c_s^2)\frac{\rho v_1}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (v_1^2\omega_5\omega_9\omega_{12} + 3\omega_5\omega_9 - \omega_5\omega_{12} - 3v_1^2\omega_5\omega_9 + v_1^2\omega_5\omega_{12} - \omega_5\omega_9\omega_{12} + 3c_s^2\omega_5\omega_{12} - 3c_s^2\omega_5\omega_9 - 6c_s^2\omega_9\omega_{12} + 3c_s^2\omega_5\omega_9\omega_{12})\frac{\rho v_1}{12\omega_5\omega_9\omega_{12}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-\omega_9\omega_{12} + v_1^2\omega_9\omega_{12} + 3c_s^2\omega_9\omega_{12} - 9c_s^2\omega_9 + 3c_s^2\omega_{12} + v_1^2\omega_{12} - 3v_1^2\omega_9 + 3\omega_9 - \omega_{12})\frac{\rho v_1}{12\omega_9\omega_{12}}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-9\omega_4 c_s^2 - \omega_4\omega_9 + 3\omega_4 + \omega_4 v_1^2\omega_9 + 3c_s^2\omega_9 - 3\omega_4 v_1^2 + v_1^2\omega_9 - \omega_9 + 3\omega_4 c_s^2\omega_9)\frac{\rho v_1}{12\omega_4\omega_9}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (2\omega_3\omega_4\omega_1 v_1^2 + 6\omega_3\omega_4 c_s^2\omega_2 + 18\omega_3\omega_4 c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4 c_s^2\omega_1 + 4\omega_3\omega_4 v_1^2\omega_2 - 27\omega_4 c_s^2\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 18\omega_3\omega_4 v_2^2\omega_2 + 6\omega_3\omega_4\omega_1 v_1^2\omega_2 + 9\omega_3\omega_1\omega_2 - 9\omega_3\omega_1 v_1^2\omega_2 - 9\omega_4\omega_1 v_1^2\omega_2 + 2\omega_3\omega_4\omega_2 + 18\omega_3\omega_4\omega_1 v_2^2)\frac{\rho v_1}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-2 + \omega)\frac{c_s^4}{6\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-2 + \omega_5)\frac{c_s^4}{6\omega_5}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-2 + \omega_1)\frac{c_s^4}{6\omega_1}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (3\omega_1 v_2^2 - 3v_2^2\omega_2 - 2\omega_1 - 3v_1^2\omega_2 + 2c_s^2\omega_1 + 2\omega_2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2 + 3\omega_1 v_1^2)\frac{c_s^2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (\omega_5 - \omega_{12})\frac{c_s^2\rho v_1}{2\omega_5\omega_{12}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1 v_1^2)\frac{\rho v_1}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2 \partial x_2^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (\omega_5 - \omega_{15})\frac{c_s^2\rho v_2}{2\omega_5\omega_{15}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{\rho v_2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3 \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1 \partial x_2^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 \rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 \rho} = (v_2^2\omega_{15} + \omega_{10} + 3c_s^2\omega_{15} - 3\omega_{10}c_s^2 - \omega_{10}v_2^2 - \omega_{15})\frac{v_1 v_2}{4\omega_{10}\omega_{15}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3 \rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 \rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 \rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 \rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 \rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 \rho} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1 v_1^2)\frac{v_1 v_2}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1 \partial x_2^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (2 + 3c_s^2\omega + \omega v_2^2 - \omega - 6c_s^2 - 2v_2^2)\frac{\rho v_2}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} =$
$(-\omega_{10}\omega_5\omega_{15} - \omega_5\omega_{15} - 3\omega_{10}c_s^2\omega_5 - 3\omega_{10}\omega_5 v_2^2 + 3\omega_{10}\omega_5 + \omega_5 v_2^2\omega_{15} - 6\omega_{10}c_s^2\omega_{15} + \omega_{10}\omega_5 v_2^2\omega_{15} + 3c_s^2\omega_5\omega_{15} + 3\omega_{10}c_s^2\omega_5\omega_{15})\frac{\rho v_2}{12\omega_{10}\omega_5\omega_{15}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (v_2^2\omega_{15} + \omega_{10}v_2^2\omega_{15} + 3\omega_{10} + 3c_s^2\omega_{15} + 3\omega_{10}c_s^2\omega_{15} - 9\omega_{10}c_s^2 - \omega_{10}\omega_{15} - 3\omega_{10}v_2^2 - \omega_{15})\frac{\rho v_2}{12\omega_{10}\omega_{15}}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (-\omega_7\omega_5 - 9c_s^2\omega_5 - 3\omega_5 v_2^2 - \omega_7 + \omega_7\omega_5 v_2^2 + 3\omega_7 c_s^2\omega_5 + \omega_7 v_2^2 + 3\omega_5 + 3\omega_7 c_s^2)\frac{\rho v_2}{12\omega_7\omega_5}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (-9\omega_3\omega_1 v_2^2\omega_2 + 18\omega_3\omega_4\omega_1 v_1^2 - 9\omega_4\omega_1 v_2^2\omega_2 + 6\omega_3\omega_4 c_s^2\omega_2 + 18\omega_3\omega_4 c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4 c_s^2\omega_1 + 6\omega_3\omega_4\omega_1 v_2^2\omega_2 - 18\omega_3\omega_4 v_1^2\omega_2 - 27\omega_4 c_s^2\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 4\omega_3\omega_4 v_2^2\omega_2 + 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 2\omega_3\omega_4\omega_1 v_2^2)\frac{\rho v_2}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1 \partial x_2^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = (3v_2^2\omega_{15} + \omega_{10} + c_s^2\omega_{15} - \omega_{10}c_s^2 - 3\omega_{10}v_2^2 - \omega_{15})\frac{\rho v_1}{4\omega_{10}\omega_{15}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1 v_1^2)\frac{\rho v_1}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^4\rho}$ **at** $\frac{\partial^4 \rho}{\partial x_2^4}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^4\rho} = (c_s^2\omega + 6v_2^4 + 3\omega v_2^2 + 2c_s^4 - 3\omega v_2^4 + 24c_s^2 v_2^2 - c_s^4\omega - 2c_s^2 - 6v_2^2 - 12c_s^2\omega v_2^2)\frac{1}{24\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho} = (6v_2^4 - 3\omega_{10}v_2^4 - \omega_{10}c_s^4 + 2c_s^4 + \omega_{10}c_s^2 + 24c_s^2 v_2^2 - 12\omega_{10}c_s^2 v_2^2 - 2c_s^2 - 6v_2^2 + 3\omega_{10}v_2^2)\frac{1}{24\omega_{10}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^4\rho} = (c_s^2\omega_5 + 6v_2^4 + 3\omega_5 v_2^2 + 2c_s^4 - 12c_s^2\omega_5 v_2^2 - c_s^4\omega_5 + 24c_s^2 v_2^2 - 2c_s^2 - 6v_2^2 - 3\omega_5 v_2^4)\frac{1}{24\omega_5}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^4\rho} = (-6\omega_1 v_2^2 - 9\omega_1 v_2^4\omega_2 + 2c_s^4\omega_1 - 12v_2^2\omega_2 + 4c_s^4\omega_2 - 3c_s^4\omega_1\omega_2 + 9\omega_1 v_2^2\omega_2 + 24c_s^2\omega_1 v_2^2 - 2c_s^2\omega_1 + 12v_2^4\omega_2 - 4c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 36c_s^2\omega_1 v_2^2\omega_2 + 48c_s^2 v_2^2\omega_2 + 6\omega_1 v_2^4)\frac{1}{72\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^4 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^4}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^4 v_2} = (-4 - 3c_s^2\omega - 5\omega v_2^2 + 2\omega + 6c_s^2 + 10v_2^2)\frac{\rho v_2}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4 v_2} = (-4 + 2\omega_{10} - 3\omega_{10}c_s^2 + 6c_s^2 + 10v_2^2 - 5\omega_{10}v_2^2)\frac{\rho v_2}{12\omega_{10}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^4 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4 v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^4 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4 v_2}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^4 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4 v_2}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^4 v_2} = (-4 - 3c_s^2\omega_5 - 5\omega_5 v_2^2 + 2\omega_5 + 6c_s^2 + 10v_2^2)\frac{\rho v_2}{12\omega_5}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^4 v_2} = (10\omega_1 v_2^2 + 20v_2^2\omega_2 + 6\omega_1\omega_2 - 4\omega_1 - 15\omega_1 v_2^2\omega_2 + 6c_s^2\omega_1 - 8\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2)\frac{\rho v_2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^3\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = (\omega_{13}v_1^2 - \omega_{13} + 3\omega_{13}c_s^2 - 3c_s^2\omega_9 - v_1^2\omega_9 + \omega_9)\frac{v_1v_3}{4\omega_{13}\omega_9}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = (\omega_1v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2v_3^2 - 3c_s^2\omega_2)\frac{v_1v_3}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (3\omega_{13}v_1^2 - \omega_{13} + \omega_{13}c_s^2 - c_s^2\omega_9 - 3v_1^2\omega_9 + \omega_9)\frac{\rho v_3}{4\omega_{13}\omega_9}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (\omega_1v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2v_3^2 - 3c_s^2\omega_2)\frac{\rho v_3}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = (2 - 2v_1^2 + 3c_s^2\omega - \omega + \omega v_1^2 - 6c_s^2)\frac{\rho v_1}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = (\omega_6\omega_{13}v_1^2 + 3\omega_6\omega_{13}c_s^2\omega_9 - 3\omega_6c_s^2\omega_9 - \omega_6\omega_{13} + 3\omega_6\omega_{13}c_s^2 - 6\omega_{13}c_s^2\omega_9 + 3\omega_6\omega_9 - \omega_6\omega_{13}\omega_9 - 3\omega_6v_1^2\omega_9 + \omega_6\omega_{13}v_1^2\omega_9)\frac{\rho v_1}{12\omega_6\omega_{13}\omega_9}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = (\omega_{13}v_1^2 - \omega_{13} + 3\omega_{13}c_s^2 + \omega_{13}v_1^2\omega_9 - 9c_s^2\omega_9 - \omega_{13}\omega_9 + 3\omega_{13}c_s^2\omega_9 - 3v_1^2\omega_9 + 3\omega_9)\frac{\rho v_1}{12\omega_{13}\omega_9}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = (-9\omega_4c_s^2 - \omega_4\omega_{12} + 3\omega_4 + \omega_4v_1^2\omega_{12} - 3\omega_4v_1^2 + 3c_s^2\omega_{12} + v_1^2\omega_{12} + 3\omega_4c_s^2\omega_{12} - \omega_{12})\frac{\rho v_1}{12\omega_4\omega_{12}}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = (2\omega_3\omega_4\omega_1v_1^2 - 18\omega_3\omega_4\omega_2v_3^2 + 6\omega_3\omega_4c_s^2\omega_2 + 18\omega_3\omega_4c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4c_s^2\omega_1 + 4\omega_3\omega_4v_1^2\omega_2 - 27\omega_4c_s^2\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 6\omega_3\omega_4\omega_1v_1^2\omega_2 + 9\omega_3\omega_1\omega_2 - 9\omega_3\omega_1v_1^2\omega_2 - 9\omega_4\omega_1v_1^2\omega_2 + 18\omega_3\omega_4\omega_1v_3^2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_1}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^2_x\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y\mathrm{D}_z v_2} = (-\omega_8 + \omega_5)\frac{c_s^2\rho v_3}{2\omega_8\omega_5}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-2\omega_3\omega_4\omega_2 v_3^2 - 6\omega_3\omega_4 c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4 c_s^2\omega_1 - 27\omega_4 c_s^2\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_4\omega_1\omega_2 v_3^2 + 9\omega_3\omega_1\omega_2 v_3^2 - 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_3^2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (\omega_6 - \omega_8)\frac{c_s^2\rho v_2}{2\omega_6\omega_8}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (9\omega_3\omega_1 v_2^2\omega_2 - 9\omega_4\omega_1 v_2^2\omega_2 - 6\omega_3\omega_4 c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4 c_s^2\omega_1 - 27\omega_4 c_s^2\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 2\omega_3\omega_4 v_2^2\omega_2 - 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 2\omega_3\omega_4\omega_1 v_2^2)\frac{\rho v_2}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (-\omega_8 + \omega_5)\frac{c_s^2\rho v_3}{2\omega_8\omega_5}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (-2\omega_3\omega_4\omega_2 v_3^2 - 6\omega_3\omega_4 c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4 c_s^2\omega_1 - 27\omega_4 c_s^2\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_4\omega_1\omega_2 v_3^2 + 9\omega_3\omega_1\omega_2 v_3^2 - 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_3^2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (\omega_7 - \omega_8)\frac{c_s^2\rho v_1}{2\omega_7\omega_8}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (2\omega_3\omega_4\omega_1 v_1^2 - 6\omega_3\omega_4 c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4 c_s^2\omega_1 - 2\omega_3\omega_4 v_1^2\omega_2 - 27\omega_4 c_s^2\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_3\omega_1\omega_2 + 9\omega_3\omega_1 v_1^2\omega_2 - 9\omega_4\omega_1 v_1^2\omega_2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_1}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^3\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (\omega_{16}v_2^2 - \omega_{16} + \omega_{10} + 3\omega_{16}c_s^2 - 3\omega_{10}c_s^2 - \omega_{10}v_2^2)\frac{v_2 v_3}{4\omega_{16}\omega_{10}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (\omega_1 v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2 v_3^2 - 3c_s^2\omega_2)\frac{v_2 v_3}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = (3\omega_{16}v_2^2 - \omega_{16} + \omega_{10} + \omega_{16}c_s^2 - \omega_{10}c_s^2 - 3\omega_{10}v_2^2)\frac{\rho v_3}{4\omega_{16}\omega_{10}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = (\omega_1 v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2 v_3^2 - 3c_s^2\omega_2)\frac{\rho v_3}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^3\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (2 + 3c_s^2\omega + \omega v_2^2 - \omega - 6c_s^2 - 2v_2^2)\frac{\rho v_2}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (3\omega_{16}\omega_7 c_s^2 + \omega_{16}\omega_{10}\omega_7 v_2^2 - \omega_{16}\omega_7 + 3\omega_{16}\omega_{10}\omega_7 c_s^2 - \omega_{16}\omega_{10}\omega_7 - 6\omega_{16}\omega_{10}c_s^2 + \omega_{16}\omega_7 v_2^2 + 3\omega_{10}\omega_7 - 3\omega_{10}\omega_7 v_2^2 - 3\omega_{10}\omega_7 c_s^2)\frac{\rho v_2}{12\omega_{16}\omega_{10}\omega_7}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (\omega_{16}v_2^2 + \omega_{16}\omega_{10}v_2^2 - \omega_{16} + 3\omega_{10} + 3\omega_{16}c_s^2 + 3\omega_{16}\omega_{10}c_s^2 - \omega_{16}\omega_{10} - 9\omega_{10}c_s^2 - 3\omega_{10}v_2^2)\frac{\rho v_2}{12\omega_{16}\omega_{10}}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (-9c_s^2\omega_5 - \omega_{11}\omega_5 - 3\omega_5 v_2^2 + 3c_s^2\omega_{11} + 3c_s^2\omega_{11}\omega_5 - \omega_{11} + \omega_{11}v_2^2 + \omega_{11}\omega_5 v_2^2 + 3\omega_5)\frac{\rho v_2}{12\omega_{11}\omega_5}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (-9\omega_3\omega_1 v_2^2\omega_2 - 9\omega_4\omega_1 v_2^2\omega_2 - 18\omega_3\omega_4\omega_2 v_3^2 + 6\omega_3\omega_4 c_s^2\omega_2 + 18\omega_3\omega_4 c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4 c_s^2\omega_1 + 6\omega_3\omega_4\omega_1 v_2^2\omega_2 - 27\omega_4 c_s^2\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 4\omega_3\omega_4 v_2^2\omega_2 + 9\omega_3\omega_1\omega_2 + 18\omega_3\omega_4\omega_1 v_3^2 + 2\omega_3\omega_4\omega_2 + 2\omega_3\omega_4\omega_1 v_2^2)\frac{\rho v_2}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = (-2+\omega)\frac{c_s^4}{6\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = (-2+\omega_6)\frac{c_s^4}{6\omega_6}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = (-2+\omega_2)\frac{c_s^4}{6\omega_2}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = (3\omega_1 v_3^2 - 2\omega_1 - 3v_1^2\omega_2 + 2c_s^2\omega_1 + 2\omega_2 - 3\omega_2 v_3^2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2 + 3\omega_1 v_1^2)\frac{c_s^2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = (\omega_6 - \omega_{13})\frac{c_s^2\rho v_1}{2\omega_6\omega_{13}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1 v_1^2)\frac{\rho v_1}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = (\omega_6 - \omega_{18})\frac{c_s^2\rho v_3}{2\omega_6\omega_{18}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = (\omega_1 v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2 v_3^2 - 3c_s^2\omega_2)\frac{\rho v_3}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1 \partial x_2 \partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = (\omega_6 - \omega_8)\frac{c_s^2 \rho v_2}{2\omega_6\omega_8}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = (9\omega_3\omega_1 v_2^2\omega_2 - 9\omega_4\omega_1 v_2^2\omega_2 - 6\omega_3\omega_4 c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4 c_s^2\omega_1 - 27\omega_4 c_s^2\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 2\omega_3\omega_4 v_2^2\omega_2 - 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 2\omega_3\omega_4\omega_1 v_2^2)\frac{\rho v_2}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1 \partial x_2 \partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (\omega_7 - \omega_8)\frac{c_s^2 \rho v_1}{2\omega_7\omega_8}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (2\omega_3\omega_4\omega_1 v_1^2 - 6\omega_3\omega_4 c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4 c_s^2\omega_1 - 2\omega_3\omega_4 v_1^2\omega_2 - 27\omega_4 c_s^2\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_3\omega_1\omega_2 + 9\omega_3\omega_1 v_1^2\omega_2 - 9\omega_4\omega_1 v_1^2\omega_2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_1}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4 \rho}{\partial x_2^2 \partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-2 + \omega)\frac{c_s^4}{6\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-2 + \omega_7)\frac{c_s^4}{6\omega_7}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-2 + \omega_3)\frac{c_s^4}{6\omega_3}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (3\omega_1 v_2^2 + 3\omega_1 v_3^2 - 3v_2^2\omega_2 - 2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 - 3\omega_2 v_3^2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2)\frac{c_s^2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^2 \partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (-\omega_{16}+\omega_7)\frac{c_s^2\rho v_2}{2\omega_{16}\omega_7}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{\rho v_2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (-\omega_{19}+\omega_7)\frac{c_s^2\rho v_3}{2\omega_{19}\omega_7}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (\omega_1 v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2 v_3^2 - 3c_s^2\omega_2)\frac{\rho v_3}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (-3c_s^2\omega_{11} + v_3^2\omega_{18} + \omega_{11} - \omega_{11}v_3^2 - \omega_{18} + 3c_s^2\omega_{18})\frac{v_1 v_3}{4\omega_{11}\omega_{18}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1 v_1^2)\frac{v_1 v_3}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (2 + 3c_s^2\omega + \omega v_3^2 - \omega - 6c_s^2 - 2v_3^2)\frac{\rho v_3}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (3\omega_6 c_s^2\omega_{11}\omega_{18} + 3\omega_6\omega_{11} - 3\omega_6 c_s^2\omega_{11} - 6c_s^2\omega_{11}\omega_{18} + \omega_6 v_3^2\omega_{18} - 3\omega_6\omega_{11}v_3^2 + \omega_6\omega_{11}v_3^2\omega_{18} - \omega_6\omega_{18} - \omega_6\omega_{11}\omega_{18} + 3\omega_6 c_s^2\omega_{18})\frac{\rho v_3}{12\omega_6\omega_{11}\omega_{18}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (3c_s^2\omega_{11}\omega_{18} - 9c_s^2\omega_{11} + v_3^2\omega_{18} + 3\omega_{11} - 3\omega_{11}v_3^2 - \omega_{18} - \omega_{11}\omega_{18} + 3c_s^2\omega_{18} + \omega_{11}v_3^2\omega_{18})\frac{\rho v_3}{12\omega_{11}\omega_{18}}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (3\omega_6 + 3c_s^2\omega_8 + 3\omega_6 c_s^2\omega_8 - \omega_6\omega_8 + \omega_6\omega_8 v_3^2 + \omega_8 v_3^2 - 9\omega_6 c_s^2 - \omega_8 - 3\omega_6 v_3^2)\frac{\rho v_3}{12\omega_6\omega_8}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (18\omega_3\omega_4\omega_1 v_1^2 + 4\omega_3\omega_4\omega_2 v_3^2 + 6\omega_3\omega_4 c_s^2\omega_2 + 18\omega_3\omega_4 c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4 c_s^2\omega_1 - 18\omega_3\omega_4 v_1^2\omega_2 - 27\omega_4 c_s^2\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_4\omega_1\omega_2 v_3^2 - 9\omega_3\omega_1\omega_2 v_3^2 + 9\omega_3\omega_1\omega_2 + 6\omega_3\omega_4\omega_1\omega_2 v_3^2 + 2\omega_3\omega_4\omega_1 v_3^2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1 \partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = (-c_s^2\omega_{11} + 3v_3^2\omega_{18} + \omega_{11} - 3\omega_{11}v_3^2 - \omega_{18} + c_s^2\omega_{18})\frac{\rho v_1}{4\omega_{11}\omega_{18}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1 v_1^2)\frac{\rho v_1}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y\mathrm{D}_z^3 \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_2 \partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3 \rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 \rho} = (-\omega_{19} + 3\omega_{19}c_s^2 + \omega_{19}v_3^2 - 3c_s^2\omega_{11} + \omega_{11} - \omega_{11}v_3^2)\frac{v_2 v_3}{4\omega_{19}\omega_{11}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3 \rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 \rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 \rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 \rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 \rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 \rho} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{v_2 v_3}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2 \partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (2 + 3c_s^2\omega + \omega v_3^2 - \omega - 6c_s^2 - 2v_3^2)\frac{\rho v_3}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} =$
$(-3\omega_7\omega_{11}v_3^2 - \omega_{19}\omega_7 - \omega_{19}\omega_7\omega_{11} + \omega_{19}\omega_7\omega_{11}v_3^2 - 6\omega_{19}c_s^2\omega_{11} + 3\omega_7\omega_{11} + \omega_{19}\omega_7 v_3^2 + 3\omega_{19}\omega_7 c_s^2\omega_{11} + 3\omega_{19}\omega_7 c_s^2 - 3\omega_7 c_s^2\omega_{11})\frac{\rho v_3}{12\omega_{19}\omega_7\omega_{11}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (-\omega_{19} + 3\omega_{19}c_s^2 + 3\omega_{19}c_s^2\omega_{11} + \omega_{19}v_3^2 - 9c_s^2\omega_{11} + 3\omega_{11} + \omega_{19}\omega_{11}v_3^2 - \omega_{19}\omega_{11} - 3\omega_{11}v_3^2)\frac{\rho v_3}{12\omega_{19}\omega_{11}}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (3\omega_6 - \omega_{10} - \omega_6\omega_{10} + 3\omega_6\omega_{10}c_s^2 - 9\omega_6 c_s^2 + 3\omega_{10}c_s^2 + \omega_6\omega_{10}v_3^2 - 3\omega_6 v_3^2 + \omega_{10}v_3^2)\frac{\rho v_3}{12\omega_6\omega_{10}}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (4\omega_3\omega_4\omega_2 v_3^2 + 6\omega_3\omega_4 c_s^2\omega_2 + 18\omega_3\omega_4 c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4 c_s^2\omega_1 - 27\omega_4 c_s^2\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 18\omega_3\omega_4 v_2^2\omega_2 - 9\omega_4\omega_1\omega_2 v_3^2 - 9\omega_3\omega_1\omega_2 v_3^2 + 9\omega_3\omega_1\omega_2 + 6\omega_3\omega_4\omega_1\omega_2 v_3^2 + 2\omega_3\omega_4\omega_1 v_3^2 + 2\omega_3\omega_4\omega_2 + 18\omega_3\omega_4\omega_1 v_2^2)\frac{\rho v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2 \partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = (-\omega_{19} + \omega_{19}c_s^2 + 3\omega_{19}v_3^2 - c_s^2\omega_{11} + \omega_{11} - 3\omega_{11}v_3^2)\frac{\rho v_2}{4\omega_{19}\omega_{11}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{\rho v_2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_z^4\rho}$ **at** $\frac{\partial^4 \rho}{\partial x_3^4}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_z^4\rho} = (c_s^2\omega + 6v_3^4 + 3\omega v_3^2 + 2c_s^4 - 3\omega v_3^4 + 24c_s^2 v_3^2 - c_s^4\omega - 2c_s^2 - 12c_s^2\omega v_3^2 - 6v_3^2)\frac{1}{24\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho} = (-12c_s^2\omega_{11}v_3^2 + 6v_3^4 - 3\omega_{11}v_3^4 + c_s^2\omega_{11} + 2c_s^4 + 24c_s^2 v_3^2 + 3\omega_{11}v_3^2 - 2c_s^2 - c_s^4\omega_{11} - 6v_3^2)\frac{1}{24\omega_{11}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_z^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_z^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_z^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_z^4\rho} = (6v_3^4 - 3\omega_6 v_3^4 + 2c_s^4 - \omega_6 c_s^4 - 12\omega_6 c_s^2 v_3^2 + \omega_6 c_s^2 + 24c_s^2 v_3^2 - 2c_s^2 + 3\omega_6 v_3^2 - 6v_3^2)\frac{1}{24\omega_6}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_z^4\rho} = (12\omega_2 v_3^4 + 2c_s^4\omega_1 - 6\omega_1 v_3^2 + 9\omega_1\omega_2 v_3^2 - 36c_s^2\omega_1\omega_2 v_3^2 + 48c_s^2\omega_2 v_3^2 + 4c_s^4\omega_2 - 3c_s^4\omega_1\omega_2 + 24c_s^2\omega_1 v_3^2 - 2c_s^2\omega_1 + 6\omega_1 v_3^4 - 9\omega_1\omega_2 v_3^4 - 12\omega_2 v_3^2 - 4c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{1}{72\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_z^4 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_3^4}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_z^4 v_3} = (-4 - 3c_s^2\omega - 5\omega v_3^2 + 2\omega + 6c_s^2 + 10v_3^2)\frac{\rho v_3}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_3} = (-4 - 3c_s^2\omega_{11} + 2\omega_{11} - 5\omega_{11}v_3^2 + 6c_s^2 + 10v_3^2)\frac{\rho v_3}{12\omega_{11}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_z^4 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_z^4 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_3}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_z^4 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_3}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_z^4 v_3} = (-4 + 2\omega_6 - 3\omega_6 c_s^2 + 6c_s^2 - 5\omega_6 v_3^2 + 10v_3^2)\frac{\rho v_3}{12\omega_6}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_z^4 v_3} = (10\omega_1 v_3^2 - 15\omega_1\omega_2 v_3^2 + 6\omega_1\omega_2 - 4\omega_1 + 6c_s^2\omega_1 - 8\omega_2 + 20\omega_2 v_3^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2)\frac{\rho v_3}{36\omega_1\omega_2}$

3.2 Conservation of momentum: ρv_1

$$
\begin{aligned}
&v_1 \frac{\partial \rho}{\partial t} + \rho \frac{\partial v_1}{\partial t} + (v_1^2 + c_s^2) \frac{\delta_l}{\delta_t} \frac{\partial \rho}{\partial x_1} + 2\rho v_1 \frac{\delta_l}{\delta_t} \frac{\partial v_1}{\partial x_1} + v_1 v_2 \frac{\delta_l}{\delta_t} \frac{\partial \rho}{\partial x_2} + \rho v_2 \frac{\delta_l}{\delta_t} \frac{\partial v_1}{\partial x_2} + \rho v_1 \frac{\delta_l}{\delta_t} \frac{\partial v_2}{\partial x_2} + v_1 v_3 \frac{\delta_l}{\delta_t} \frac{\partial \rho}{\partial x_3} + \rho v_3 \frac{\delta_l}{\delta_t} \frac{\partial v_1}{\partial x_3} + \\
&\rho v_1 \frac{\delta_l}{\delta_t} \frac{\partial v_3}{\partial x_3} + C^{(1)}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} \frac{\delta_l^2}{\delta_t} \frac{\partial \rho}{\partial x_1} \frac{\partial v_1}{\partial x_1} + C^{(1)}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1} \frac{\delta_l^2}{\delta_t} \left(\frac{\partial v_1}{\partial x_1}\right)^2 + C^{(1)}_{\mathrm{D}_x\rho,\mathrm{D}_y v_2} \frac{\delta_l^2}{\delta_t} \frac{\partial \rho}{\partial x_1} \frac{\partial v_2}{\partial x_2} + C^{(1)}_{\mathrm{D}_x v_2,\mathrm{D}_y v_2} \frac{\delta_l^2}{\delta_t} \frac{\partial v_2}{\partial x_1} \frac{\partial v_2}{\partial x_2} + \\
&C^{(1)}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3} \frac{\delta_l^2}{\delta_t} \frac{\partial \rho}{\partial x_1} \frac{\partial v_3}{\partial x_3} + C^{(1)}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} \frac{\delta_l^2}{\delta_t} \frac{\partial v_3}{\partial x_1} \frac{\partial v_3}{\partial x_3} + C^{(1)}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} \frac{\delta_l^2}{\delta_t} \frac{\partial \rho}{\partial x_2} \frac{\partial v_2}{\partial x_1} + C^{(1)}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} \frac{\delta_l^2}{\delta_t} \frac{\partial \rho}{\partial x_2} \frac{\partial v_1}{\partial x_2} + \\
&C^{(1)}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} \frac{\delta_l^2}{\delta_t} \frac{\partial \rho}{\partial x_3} \frac{\partial v_3}{\partial x_1} + C^{(1)}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} \frac{\delta_l^2}{\delta_t} \frac{\partial \rho}{\partial x_3} \frac{\partial v_1}{\partial x_3} + C^{(1)}_{\mathrm{D}_x^2\rho} \frac{\delta_l^2}{\delta_t} \frac{\partial^2 \rho}{\partial x_1^2} + C^{(1)}_{\mathrm{D}_x^2 v_1} \frac{\delta_l^2}{\delta_t} \frac{\partial^2 v_1}{\partial x_1^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\rho} \frac{\delta_l^2}{\delta_t} \frac{\partial^2 \rho}{\partial x_1 \partial x_2} + \\
&C^{(1)}_{\mathrm{D}_x\mathrm{D}_y v_2} \frac{\delta_l^2}{\delta_t} \frac{\partial^2 v_2}{\partial x_1 \partial x_2} + C^{(1)}_{\mathrm{D}_y^2 v_1} \frac{\delta_l^2}{\delta_t} \frac{\partial^2 v_1}{\partial x_2^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z\rho} \frac{\delta_l^2}{\delta_t} \frac{\partial^2 \rho}{\partial x_1 \partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z v_3} \frac{\delta_l^2}{\delta_t} \frac{\partial^2 v_3}{\partial x_1 \partial x_3} + C^{(1)}_{\mathrm{D}_z^2 v_1} \frac{\delta_l^2}{\delta_t} \frac{\partial^2 v_1}{\partial x_3^2} + C^{(1)}_{\mathrm{D}_x^3\rho} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 \rho}{\partial x_1^3} + \\
&C^{(1)}_{\mathrm{D}_x^3 v_1} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_1}{\partial x_1^3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\rho} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 \rho}{\partial x_1^2 \partial x_2} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y v_1} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_1}{\partial x_1^2 \partial x_2} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y v_2} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_2}{\partial x_1^2 \partial x_2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\rho} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 \rho}{\partial x_1 \partial x_2^2} + \\
&C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_1}{\partial x_1 \partial x_2^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_2}{\partial x_1 \partial x_2^2} + C^{(1)}_{\mathrm{D}_y^3\rho} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 \rho}{\partial x_2^3} + C^{(1)}_{\mathrm{D}_y^3 v_1} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_1}{\partial x_2^3} + C^{(1)}_{\mathrm{D}_y^3 v_2} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_2}{\partial x_2^3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z\rho} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 \rho}{\partial x_1^2 \partial x_3} + \\
&C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z v_1} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_1}{\partial x_1^2 \partial x_3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z v_3} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_3}{\partial x_1^2 \partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 \rho}{\partial x_1 \partial x_2 \partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_2}{\partial x_1 \partial x_2 \partial x_3} + \\
&C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_3}{\partial x_1 \partial x_2 \partial x_3} + C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z v_1} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_1}{\partial x_2^2 \partial x_3} + C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z v_3} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_3}{\partial x_2^2 \partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2\rho} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 \rho}{\partial x_1 \partial x_3^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_1}{\partial x_1 \partial x_3^2} + \\
&C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_3}{\partial x_1 \partial x_3^2} + C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_1}{\partial x_2 \partial x_3^2} + C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_2}{\partial x_2 \partial x_3^2} + C^{(1)}_{\mathrm{D}_z^3\rho} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 \rho}{\partial x_3^3} + C^{(1)}_{\mathrm{D}_z^3 v_1} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_1}{\partial x_3^3} + C^{(1)}_{\mathrm{D}_z^3 v_3} \frac{\delta_l^3}{\delta_t} \frac{\partial^3 v_3}{\partial x_3^3} + \\
&C^{(1)}_{\mathrm{D}_x^4\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_1^4} + C^{(1)}_{\mathrm{D}_x^4 v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_1^4} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_y\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_1^3 \partial x_2} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_y v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_1^3 \partial x_2} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_y v_2} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_2}{\partial x_1^3 \partial x_2} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_1^2 \partial x_2^2} \\
&+ C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_1^2 \partial x_2^2} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_2}{\partial x_1^2 \partial x_2^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^3\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_1 \partial x_2^3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_1 \partial x_2^3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_2}{\partial x_1 \partial x_2^3} + \\
&C^{(1)}_{\mathrm{D}_y^4\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_2^4} + C^{(1)}_{\mathrm{D}_y^4 v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_2^4} + C^{(1)}_{\mathrm{D}_y^4 v_2} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_2}{\partial x_2^4} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_z\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_1^3 \partial x_3} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_z v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_1^3 \partial x_3} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_z v_3} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_3}{\partial x_1^3 \partial x_3} + \\
&C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_1^2 \partial x_2 \partial x_3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_1^2 \partial x_2 \partial x_3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_2}{\partial x_1^2 \partial x_2 \partial x_3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_3}{\partial x_1^2 \partial x_2 \partial x_3} + \\
&C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_1 \partial x_2^2 \partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_1 \partial x_2^2 \partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_2}{\partial x_1 \partial x_2^2 \partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_3}{\partial x_1 \partial x_2^2 \partial x_3} + \\
&C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_2^3 \partial x_3} + C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_2^3 \partial x_3} + C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z v_2} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_2}{\partial x_2^3 \partial x_3} + C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z v_3} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_3}{\partial x_2^3 \partial x_3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_1^2 \partial x_3^2} + \\
&C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_1^2 \partial x_3^2} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_3}{\partial x_1^2 \partial x_3^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_1 \partial x_2 \partial x_3^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_1 \partial x_2 \partial x_3^2} + \\
&C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_2}{\partial x_1 \partial x_2 \partial x_3^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_3}{\partial x_1 \partial x_2 \partial x_3^2} + C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_2^2 \partial x_3^2} + C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_2^2 \partial x_3^2} + \\
&C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_2}{\partial x_2^2 \partial x_3^2} + C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_3}{\partial x_2^2 \partial x_3^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_1 \partial x_3^3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_1 \partial x_3^3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_3}{\partial x_1 \partial x_3^3} + \\
&C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_2 \partial x_3^3} + C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_2 \partial x_3^3} + C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_2}{\partial x_2 \partial x_3^3} + C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_3}{\partial x_2 \partial x_3^3} + C^{(1)}_{\mathrm{D}_z^4\rho} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 \rho}{\partial x_3^4} + \\
&C^{(1)}_{\mathrm{D}_z^4 v_1} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_1}{\partial x_3^4} + C^{(1)}_{\mathrm{D}_z^4 v_3} \frac{\delta_l^4}{\delta_t} \frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

coefficient $C^{(1)}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1}$ **at** $\frac{\partial \rho}{\partial x_1} \frac{\partial v_1}{\partial x_1}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = (-2 + 6v_1^2 - 2c_s^2\omega + \omega - 3\omega v_1^2 + 4c_s^2)\tfrac{1}{\omega}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = (-2 + 6v_1^2 - 2c_s^2\omega_9 + 4c_s^2 - 3v_1^2\omega_9 + \omega_9)\tfrac{1}{\omega_9}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = (-2 + 6v_1^2 - 2\omega_4 c_s^2 + \omega_4 - 3\omega_4 v_1^2 + 4c_s^2)\tfrac{1}{\omega_4}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = (-9\omega_1 v_1^2\omega_2 + 3\omega_1\omega_2 - 2\omega_1 + 12v_1^2\omega_2 + 4c_s^2\omega_1 - 4\omega_2 + 8c_s^2\omega_2 - 6c_s^2\omega_1\omega_2 + 6\omega_1 v_1^2)\tfrac{1}{3\omega_1\omega_2}$$

coefficient $C^{(1)}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1}$ **at** $\left(\frac{\partial v_1}{\partial x_1}\right)^2$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1} = (2-\omega)\frac{3\rho v_1}{\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1} = (2-\omega_9)\frac{3\rho v_1}{\omega_9}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1} = (2-\omega_4)\frac{3\rho v_1}{\omega_4}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x v_1, \mathrm{D}_x v_1} = (-3\omega_1\omega_2 + 2\omega_1 + 4\omega_2)\frac{\rho v_1}{\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x \rho, \mathrm{D}_y v_2}$ **at** $\frac{\partial \rho}{\partial x_1}\frac{\partial v_2}{\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x \rho, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x \rho, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x \rho, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x \rho, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x \rho, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x \rho, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x \rho, \mathrm{D}_y v_2} = (3\omega_1 v_2^2 - 3v_2^2\omega_2 - \omega_1 + c_s^2\omega_1 + \omega_2 - c_s^2\omega_2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x v_2, \mathrm{D}_y v_2}$ **at** $\frac{\partial v_2}{\partial x_1}\frac{\partial v_2}{\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x v_2, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_2, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x v_2, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x v_2, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x v_2, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x v_2, \mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x v_2, \mathrm{D}_y v_2} = (\omega_1 - \omega_2)\frac{2\rho v_2}{\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x \rho, \mathrm{D}_z v_3}$ **at** $\frac{\partial \rho}{\partial x_1}\frac{\partial v_3}{\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x \rho, \mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x \rho, \mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x \rho, \mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x \rho, \mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x \rho, \mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3} = (3\omega_1 v_3^2 - \omega_1 + c_s^2\omega_1 + \omega_2 - 3\omega_2 v_3^2 - c_s^2\omega_2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3}$ **at** $\frac{\partial v_3}{\partial x_1}\frac{\partial v_3}{\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = (\omega_1 - \omega_2)\frac{2\rho v_3}{\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2}$ **at** $\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = (-2+\omega_5)\frac{c_s^2}{2\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = (6\omega_1 v_2^2 - 6v_2^2\omega_2 - 2\omega_1 + 6c_s^2\omega_1 + 2\omega_2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}$ **at** $\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = (-2+\omega_5)\frac{c_s^2}{2\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}$

coefficient $C^{(1)}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3}$ **at** $\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = (-2+\omega_6)\frac{c_s^2}{2\omega_6}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = (-2+\omega_2)\frac{c_s^2}{2\omega_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = (6\omega_1 v_3^2 - 2\omega_1 + 6c_s^2\omega_1 + 2\omega_2 - 6\omega_2 v_3^2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1}$ **at** $\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = (-2+\omega_6)\frac{c_s^2}{2\omega_6}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = (-2+\omega_2)\frac{c_s^2}{2\omega_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\rho}$ **at** $\frac{\partial^2\rho}{\partial x_1^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\rho} = (-2+2v_1^2 - 3c_s^2\omega + \omega - \omega v_1^2 + 6c_s^2)\frac{v_1}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\rho} = (-2+2v_1^2 - 3c_s^2\omega_9 + 6c_s^2 - v_1^2\omega_9 + \omega_9)\frac{v_1}{2\omega_9}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\rho} = (-2+2v_1^2 - 3\omega_4 c_s^2 + \omega_4 - \omega_4 v_1^2 + 6c_s^2)\frac{v_1}{2\omega_4}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\rho} = (-3\omega_1 v_1^2\omega_2 + 3\omega_1\omega_2 - 2\omega_1 + 4v_1^2\omega_2 + 6c_s^2\omega_1 - 4\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 + 2\omega_1 v_1^2)\frac{v_1}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x^2 v_1}$ **at** $\frac{\partial^2 v_1}{\partial x_1^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2 v_1} = (-2+6v_1^2 - c_s^2\omega + \omega - 3\omega v_1^2 + 2c_s^2)\frac{\rho}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_1} = (-2+6v_1^2 - c_s^2\omega_9 + 2c_s^2 - 3v_1^2\omega_9 + \omega_9)\frac{\rho}{2\omega_9}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2 v_1} = (-2+6v_1^2 - \omega_4 c_s^2 + \omega_4 - 3\omega_4 v_1^2 + 2c_s^2)\frac{\rho}{2\omega_4}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2 v_1} = (-9\omega_1 v_1^2\omega_2 + 3\omega_1\omega_2 - 2\omega_1 + 12v_1^2\omega_2 + 2c_s^2\omega_1 - 4\omega_2 + 4c_s^2\omega_2 - 3c_s^2\omega_1\omega_2 + 6\omega_1 v_1^2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\rho}$ **at** $\frac{\partial^2\rho}{\partial x_1\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{v_2}{3\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y v_2}$ **at** $\frac{\partial^2 v_2}{\partial x_1\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y v_2} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_2} = (-2+\omega_5)\frac{c_s^2\rho}{2\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y v_2} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y v_2} = (6\omega_1 v_2^2 - 6v_2^2\omega_2 - 2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^2 v_1}{\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2 v_1} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_1} = (-2+\omega_5)\frac{c_s^2\rho}{2\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2 v_1} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2 v_1}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z\rho}$ **at** $\frac{\partial^2\rho}{\partial x_1\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z\rho} = (\omega_1 v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2 v_3^2 - 3c_s^2\omega_2)\frac{v_3}{3\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z v_3}$ **at** $\frac{\partial^2 v_3}{\partial x_1 \partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z v_3} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_3} = (-2+\omega_6)\frac{c_s^2\rho}{2\omega_6}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z v_3} = (-2+\omega_2)\frac{c_s^2\rho}{2\omega_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z v_3} = (6\omega_1 v_3^2 - 2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 - 6\omega_2 v_3^2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^2 v_1}{\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^2 v_1} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_1} = (-2+\omega_6)\frac{c_s^2\rho}{2\omega_6}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z^2 v_1} = (-2+\omega_2)\frac{c_s^2\rho}{2\omega_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z^2 v_1} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_x^3\rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3\rho} = (-36v_1^2+12c_s^2\omega-144c_s^2\omega v_1^2-7\omega^2 v_1^2+144c_s^2 v_1^2-c_s^2\omega^2+12c_s^4-36\omega v_1^4+7\omega^2 v_1^4+36\omega v_1^2-12c_s^4\omega-12c_s^2+c_s^4\omega^2+36v_1^4+24c_s^2\omega^2 v_1^2)\frac{1}{12\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\rho} =$
$(-36v_1^2 - 12c_s^4\omega_9 + 7v_1^4\omega_9^2 + 24c_s^2 v_1^2\omega_9^2 + 144c_s^2 v_1^2 - 144c_s^2 v_1^2\omega_9 + 12c_s^4 + c_s^4\omega_9^2 - 36v_1^4\omega_9 + 12c_s^2\omega_9 - 7v_1^2\omega_9^2 - 12c_s^2 + 36v_1^4 - c_s^2\omega_9^2 + 36v_1^2\omega_9)\frac{1}{12\omega_9^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\rho} =$
$(-36v_1^2 - 144\omega_4 c_s^2 v_1^2 + 12\omega_4 c_s^2 + \omega_4^2 c_s^4 - 7\omega_4^2 v_1^2 + 144c_s^2 v_1^2 + 12c_s^4 - 36\omega_4 v_1^4 + 7\omega_4^2 v_1^4 + 36\omega_4 v_1^2 - 12c_s^2 + 24\omega_4^2 c_s^2 v_1^2 - 12\omega_4 c_s^4 + 36v_1^4 - \omega_4^2 c_s^2)\frac{1}{12\omega_4^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\rho} = (c_s^4\omega_1^2\omega_2^2 + 8c_s^4\omega_2^2 - 12\omega_1^2v_1^4\omega_2 - 4\omega_1^2v_1^2 + 48c_s^2\omega_1v_1^2\omega_2 + 24\omega_1v_1^2\omega_2^2 + 4c_s^2\omega_1^2\omega_2 - c_s^2\omega_1^2\omega_2^2 - 96c_s^2\omega_1v_1^2\omega_2^2 + 72c_s^2v_1^2\omega_2^2 + 4c_s^4\omega_1^2 - 16\omega_1v_1^2\omega_2 - 4c_s^4\omega_1^2\omega_2 + 7\omega_1^2v_1^4\omega_2^2 + 16v_1^4\omega_2^2 + 8c_s^2\omega_1\omega_2^2 - 8c_s^2\omega_2^2 + 12\omega_1^2v_1^2\omega_2 + 24c_s^2\omega_1^2v_1^2\omega_2^2 + 24c_s^2\omega_1^2v_1^2 - 24\omega_1v_1^4\omega_2^2 + 16\omega_1v_1^4\omega_2 - 4c_s^2\omega_1^2 + 4\omega_1^2v_1^4 - 16v_1^2\omega_2^2 - 7\omega_1^2v_1^2\omega_2^2 - 48c_s^2\omega_1^2v_1^2\omega_2 - 8c_s^4\omega_1\omega_2^2)\frac{1}{12\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}^3_x v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_x v_1} = (-24 + 60v_1^2 - 36c_s^2\omega - 4\omega^2 + 11\omega^2v_1^2 + 5c_s^2\omega^2 + 24\omega - 60\omega v_1^2 + 36c_s^2)\frac{\rho v_1}{6\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1} = (-24 + 60v_1^2 - 4\omega_9^2 - 36c_s^2\omega_9 + 11v_1^2\omega_9^2 + 36c_s^2 + 5c_s^2\omega_9^2 - 60v_1^2\omega_9 + 24\omega_9)\frac{\rho v_1}{6\omega_9^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_x v_1} = (-24 + 60v_1^2 - 36\omega_4c_s^2 + 11\omega_4^2v_1^2 + 24\omega_4 - 60\omega_4v_1^2 - 4\omega_4^2 + 36c_s^2 + 5\omega_4^2c_s^2)\frac{\rho v_1}{6\omega_4^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_x v_1} = (8\omega_1^2v_1^2 - 40\omega_1v_1^2\omega_2^2 + 16\omega_1\omega_2^2 - 12c_s^2\omega_1^2\omega_2 + 5c_s^2\omega_1^2\omega_2^2 + 24\omega_1v_1^2\omega_2 - 8\omega_1\omega_2 + 8\omega_1^2\omega_2 - 4\omega_1^2 - 24c_s^2\omega_1\omega_2^2 + 20c_s^2\omega_2^2 - 20\omega_1^2v_1^2\omega_2 + 8c_s^2\omega_1^2 + 8c_s^2\omega_1\omega_2 + 28v_1^2\omega_2^2 + 11\omega_1^2v_1^2\omega_2^2 - 12\omega_2^2 - 4\omega_1^2\omega_2^2)\frac{\rho v_1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}^2_x\mathrm{D}_y\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1^2\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = (-v_1^2\omega_5\omega_9\omega_{12} + v_1^2\omega_5\omega_9^2 - \omega_9\omega_{12} + \omega_5\omega_9 - \omega_5\omega_{12} - \omega_5\omega_9^2 + v_1^2\omega_9\omega_{12} - v_1^2\omega_5\omega_9 + v_1^2\omega_5\omega_{12} + \omega_9^2 + \omega_5\omega_9\omega_{12} + 3c_s^2\omega_5\omega_{12} - 3c_s^2\omega_5\omega_9 + 3c_s^2\omega_9\omega_{12} - v_1^2\omega_9^2 - 3c_s^2\omega_9^2 + 3c_s^2\omega_5\omega_9^2 - 3c_s^2\omega_5\omega_9\omega_{12})\frac{v_1v_2}{\omega_5\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = (2\omega_1^2v_1^2 - 4v_2^2\omega_2^2 - 3\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 3\omega_1^2v_2^2\omega_2 - 4\omega_1v_1^2\omega_2 + 2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_2^2 + 2\omega_1v_2^2\omega_2 + 12c_s^2\omega_1^2 - 6c_s^2\omega_1\omega_2 + 2v_1^2\omega_2^2 + 3\omega_1v_2^2\omega_2^2 + 2\omega_1^2v_2^2 + 2\omega_2^2)\frac{v_1v_2}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}^2_x\mathrm{D}_y v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^2\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = (-3v_1^2\omega_5\omega_9\omega_{12} + 3v_1^2\omega_5\omega_9^2 - \omega_9\omega_{12} + \omega_5\omega_9 - \omega_5\omega_{12} - \omega_5\omega_9^2 + 3v_1^2\omega_9\omega_{12} - 3v_1^2\omega_5\omega_9 + 3v_1^2\omega_5\omega_{12} + \omega_9^2 + \omega_5\omega_9\omega_{12} + c_s^2\omega_5\omega_{12} - c_s^2\omega_5\omega_9 + c_s^2\omega_9\omega_{12} - 3v_1^2\omega_9^2 - c_s^2\omega_9^2 + c_s^2\omega_5\omega_9^2 - c_s^2\omega_5\omega_9\omega_{12})\frac{\rho v_2}{\omega_5\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_1} = (3\omega_3 c_s^2\omega_1\omega_2^2 + 6\omega_3 v_1^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - 2\omega_1\omega_2^2 - 6c_s^2\omega_1^2\omega_2 + 2\omega_3\omega_1^2 v_2^2 + \omega_3\omega_1^2\omega_2 - 2\omega_1^2 v_2^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 - 4\omega_3 c_s^2\omega_2^2 + \omega_3\omega_1 v_2^2\omega_2^2 + 2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + 6c_s^2\omega_1\omega_2^2 + 4\omega_3\omega_1\omega_2 - 2\omega_3 v_2^2\omega_2^2 - 12\omega_3\omega_1 v_1^2\omega_2 - \omega_3\omega_1^2 v_2^2\omega_2 - \omega_3\omega_1\omega_2^2 + 6\omega_3\omega_1^2 v_1^2 + 2\omega_1 v_2^2\omega_2^2 - 4\omega_3\omega_1^2)\frac{\rho v_2}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1^2\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = (12 - 12v_1^2 + 36c_s^2\omega + 3\omega^2 - 3\omega^2 v_1^2 - 11c_s^2\omega^2 - 12\omega + 12\omega v_1^2 - 36c_s^2)\frac{\rho v_1}{12\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = (12c_s^2\omega_5^2\omega_9^2 + 42c_s^2\omega_5\omega_9^2\omega_{12} - 12v_1^2\omega_5\omega_9^2 - 3v_1^2\omega_5^2\omega_9^2\omega_{12} - 18c_s^2\omega_5^2\omega_9\omega_{12} + 6\omega_5^2\omega_9\omega_{12} + 12\omega_5\omega_9^2 - 6\omega_5\omega_9^2\omega_{12} + 36c_s^2\omega_5^2\omega_{12} - 12c_s^2\omega_5^2\omega_9 - 24c_s^2\omega_9^2\omega_{12} - 12v_1^2\omega_5^2\omega_9 + 12v_1^2\omega_5^2\omega_{12} + 3\omega_5^2\omega_9^2\omega_{12} - 12\omega_5^2\omega_9^2 - 6v_1^2\omega_5^2\omega_9\omega_{12} + 12\omega_5^2\omega_9 - 12\omega_5^2\omega_{12} - 11c_s^2\omega_5^2\omega_9^2\omega_{12} - 12c_s^2\omega_5\omega_9^2 + 6v_1^2\omega_5\omega_9^2\omega_{12} - 24c_s^2\omega_5\omega_9\omega_{12} + 12v_1^2\omega_5^2\omega_9^2)\frac{\rho v_1}{12\omega_5^2\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = (-6v_1^2\omega_5\omega_9\omega_{12} - 11c_s^2\omega_5\omega_9^2\omega_{12} + 12v_1^2\omega_5\omega_9^2 + 12\omega_5\omega_9 - 12\omega_5\omega_{12} - 12\omega_5\omega_9^2 + 3\omega_5\omega_9^2\omega_{12} - 12v_1^2\omega_5\omega_9 + 12v_1^2\omega_5\omega_{12} + 18c_s^2\omega_9^2\omega_{12} + 6v_1^2\omega_9^2\omega_{12} + 12\omega_9^2 + 6\omega_5\omega_9\omega_{12} + 36c_s^2\omega_5\omega_{12} - 36c_s^2\omega_5\omega_9 - 12v_1^2\omega_9^2 - 6\omega_9^2\omega_{12} - 36c_s^2\omega_9^2 + 36c_s^2\omega_5\omega_9^2 - 3v_1^2\omega_5\omega_9^2\omega_{12} - 18c_s^2\omega_5\omega_9\omega_{12})\frac{\rho v_1}{12\omega_5\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = (12\omega_1 v_1^2\omega_9 - 18\omega_4 c_s^2\omega_1\omega_9 - 12\omega_1\omega_9 + 36\omega_4^2 c_s^2\omega_1 + 18\omega_4^2 c_s^2\omega_9 - 3\omega_4^2\omega_1 v_1^2\omega_9 - 12\omega_4^2 v_1^2 + 12\omega_4\omega_1 + 6\omega_4\omega_1\omega_9 + 6\omega_4^2 v_1^2\omega_9 + 12\omega_4^2\omega_1 v_1^2 + 3\omega_4^2\omega_1\omega_9 - 11\omega_4^2 c_s^2\omega_1\omega_9 - 12\omega_4^2\omega_1 + 36c_s^2\omega_1\omega_9 - 6\omega_4\omega_1 v_1^2\omega_9 - 6\omega_4^2\omega_9 + 12\omega_4^2 - 12\omega_4\omega_1 v_1^2 - 36\omega_4 c_s^2\omega_1 - 36\omega_4^2 c_s^2)\frac{\rho v_1}{12\omega_4^2\omega_1\omega_9}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} =$
$(-36\omega_3 c_s^2\omega_1\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 12\omega_3\omega_4\omega_1^2 v_2^2 - 24\omega_4 c_s^2\omega_1\omega_2^2 - 4\omega_4\omega_1^2 v_1^2\omega_2 - 3\omega_3\omega_4\omega_1^2 v_1^2\omega_2^2 + 8\omega_3\omega_4 v_1^2\omega_2^2 + 18\omega_3\omega_4\omega_1 v_2^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 + 4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 16\omega_3\omega_4 c_s^2\omega_1^2 + 8\omega_4\omega_1\omega_2^2 - 2\omega_3\omega_4\omega_1^2 v_1^2\omega_2 + 12\omega_3\omega_4\omega_1 v_2^2\omega_2 + 16\omega_3\omega_4 c_s^2\omega_2^2 + 12\omega_3\omega_4 c_s^2\omega_1\omega_2^2 + 6\omega_4\omega_1^2 v_1^2\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 + 6\omega_3\omega_1^2 v_1^2\omega_2^2 - 12\omega_4 c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_4\omega_1\omega_2 - 18\omega_3\omega_4\omega_1^2 v_2^2\omega_2 - 6\omega_4\omega_1^2\omega_2^2 - 8\omega_4\omega_1 v_1^2\omega_2^2 - 12\omega_3\omega_1 v_1^2\omega_2^2 - 11\omega_3\omega_4 c_s^2\omega_1^2\omega_2^2 - 12\omega_3\omega_4 c_s^2\omega_1^2\omega_2 + 12\omega_3\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 - 8\omega_3\omega_4\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 - 8\omega_3\omega_4\omega_1^2 + 2\omega_3\omega_4\omega_1 v_1^2\omega_2^2 - 24\omega_3\omega_4 v_2^2\omega_2^2 + 18\omega_4 c_s^2\omega_1^2\omega_2^2 + 4\omega_3\omega_4\omega_1^2 v_1^2)\frac{\rho v_1}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (-12 - \omega^2 + 12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (-12 - \omega_5^2 + 12\omega_5)\frac{c_s^4}{6\omega_5^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (-12 + 12\omega_1 - \omega_1^2)\frac{c_s^4}{6\omega_1^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (-c_s^4\omega_1^2\omega_2^2 - 14c_s^4\omega_2^2 + 2\omega_1 v_2^4\omega_2 + 4v_2^2\omega_2^2 - 15c_s^2\omega_1^2 v_2^2\omega_2 + 2c_s^2\omega_1^2\omega_2 + 2\omega_1^2 v_2^4 + 12c_s^2\omega_1^2 v_2^2 + 3\omega_1^2 v_2^2\omega_2 + 2c_s^4\omega_1^2 - 2c_s^4\omega_1^2\omega_2 + 3\omega_1 v_2^4\omega_2^2 - 2c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_2^2 - 18c_s^2 v_2^2\omega_2^2 + 15c_s^2\omega_1 v_2^2\omega_2^2 - 2\omega_1 v_2^2\omega_2 - 4v_2^4\omega_2^2 - 3\omega_1^2 v_2^4\omega_2 - 2c_s^2\omega_1^2 + 6c_s^2\omega_1 v_2^2\omega_2 - 3\omega_1 v_2^2\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 2\omega_1^2 v_2^2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = \frac{-c_s^2\rho v_1}{6}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (12\omega_5^2 - 12\omega_9\omega_{12} + 12\omega_5\omega_9 - 12\omega_5\omega_{12} - \omega_5^2\omega_9\omega_{12} + 12\omega_5\omega_9\omega_{12} - 12\omega_5^2\omega_9)\frac{c_s^2\rho v_1}{6\omega_5^2\omega_9\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1 \partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = (-\omega_5^2 + \omega_5\omega_{15} + 2\omega_5 - 2\omega_{15})\frac{c_s^2\rho v_2}{\omega_5^2\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = (-14v_2^2\omega_2^2 - 5\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 11\omega_1^2 v_2^2\omega_2 - 2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 10c_s^2\omega_2^2 + 6\omega_1 v_2^2\omega_2 + 8c_s^2\omega_1^2 + 2c_s^2\omega_1\omega_2 + 11\omega_1 v_2^2\omega_2^2 + 8\omega_1^2 v_2^2 + 6\omega_2^2)\frac{\rho v_2}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_y^3\rho}$ **at** $\frac{\partial^3 \rho}{\partial x_2^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\rho} = (-1 + 3c_s^2 + v_2^2)\frac{v_1 v_2}{12}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho} = (-\omega_{10}\omega_5\omega_{15} + 6\omega_5\omega_{15} + 18\omega_{10}c_s^2\omega_5 + 12v_2^2\omega_{15} + 6\omega_{10}\omega_5 v_2^2 + 12\omega_{10} - 6\omega_{10}\omega_5 - 6\omega_5 v_2^2\omega_{15} + 36c_s^2\omega_{15} + \omega_{10}\omega_5 v_2^2\omega_{15} - 18c_s^2\omega_5\omega_{15} - 36\omega_{10}c_s^2 + 3\omega_{10}c_s^2\omega_5\omega_{15} - 12\omega_{10}v_2^2 - 12\omega_{15})\frac{v_1 v_2}{12\omega_{10}\omega_5\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

coefficient $C^{(1)}_{\mathrm{D}_y^3 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_2^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3 v_1} = (6 + 18c_s^2\omega + \omega^2 + 6\omega v_2^2 - 3c_s^2\omega^2 - 6\omega - \omega^2 v_2^2 - 18c_s^2 - 6v_2^2)\frac{\rho v_2}{6\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_1} = (-3\omega_5^2 - 3\omega_5\omega_{15} - 6c_s^2\omega_5 - 6\omega_5 v_2^2 - 3c_s^2\omega_5^2\omega_{15} - \omega_5^2 v_2^2\omega_{15} + 3c_s^2\omega_5^2 + 3\omega_5 v_2^2\omega_{15} - 12c_s^2\omega_{15} + 15c_s^2\omega_5\omega_{15} + 6\omega_5 + 3\omega_5^2 v_2^2 + \omega_5^2\omega_{15})\frac{\rho v_2}{6\omega_5^2\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3 v_1} = (6 + \omega_5\omega_{15} + 3v_2^2\omega_{15} + 9c_s^2\omega_5 + 3\omega_5 v_2^2 - \omega_5 v_2^2\omega_{15} + 9c_s^2\omega_{15} - 3c_s^2\omega_5\omega_{15} - 3\omega_5 - 18c_s^2 - 6v_2^2 - 3\omega_{15})\frac{\rho v_2}{6\omega_5\omega_{15}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_y v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_y v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_y v_1} = (6 - 3\omega_7 c_s^2\omega_1 + 3\omega_1 v_2^2 - 3\omega_7 - 3\omega_1 + \omega_7\omega_1 + 3\omega_7 v_2^2 + 9c_s^2\omega_1 - \omega_7\omega_1 v_2^2 - 18c_s^2 - 6v_2^2 + 9\omega_7 c_s^2)\frac{\rho v_2}{6\omega_7\omega_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_y v_1} = (6\omega_3 - 18\omega_4 c_s^2 - 6\omega_4 v_2^2 - 3\omega_4\omega_1 - 6\omega_3\omega_4 c_s^2\omega_1 + 3\omega_4\omega_1 v_2^2 + 9\omega_3 c_s^2\omega_1 + 6\omega_4 - 3\omega_3\omega_1 - 6\omega_3 v_2^2 + 6\omega_3\omega_4 v_2^2 + 2\omega_3\omega_4\omega_1 - 6\omega_3\omega_4 + 18\omega_3\omega_4 c_s^2 + 3\omega_3\omega_1 v_2^2 - 18\omega_3 c_s^2 + 9\omega_4 c_s^2\omega_1 - 2\omega_3\omega_4\omega_1 v_2^2)\frac{\rho v_2}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}^3_y v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y v_2} = (-1 + c_s^2 + 3v_2^2)\frac{\rho v_1}{12}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_y v_2} = (-\omega_{10}\omega_5\omega_{15} + 6\omega_5\omega_{15} + 6\omega_{10}c_s^2\omega_5 + 36v_2^2\omega_{15} + 18\omega_{10}\omega_5 v_2^2 + 12\omega_{10} - 6\omega_{10}\omega_5 - 18\omega_5 v_2^2\omega_{15} + 12c_s^2\omega_{15} + 3\omega_{10}\omega_5 v_2^2\omega_{15} - 6c_s^2\omega_5\omega_{15} - 12\omega_{10}c_s^2 + \omega_{10}c_s^2\omega_5\omega_{15} - 36\omega_{10}v_2^2 - 12\omega_{15})\frac{\rho v_1}{12\omega_{10}\omega_5\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_y v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_y v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_y v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_y v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_y v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

coefficient $C^{(1)}_{\mathrm{D}^2_x \mathrm{D}_z \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1^2 \partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = (\omega_6\omega_{13}v_1^2 + \omega_6 v_1^2\omega_9^2 + \omega_9^2 - 3\omega_6\omega_{13}c_s^2\omega_9 - 3\omega_6 c_s^2\omega_9 - \omega_6\omega_{13} - \omega_6\omega_9^2 + 3\omega_6\omega_{13}c_s^2 + \omega_{13}v_1^2\omega_9 - v_1^2\omega_9^2 - \omega_{13}\omega_9 - 3c_s^2\omega_9^2 + 3\omega_{13}c_s^2\omega_9 + \omega_6\omega_9 + \omega_6\omega_{13}\omega_9 - \omega_6 v_1^2\omega_9 - \omega_6\omega_{13}v_1^2\omega_9 + 3\omega_6 c_s^2\omega_9^2)\frac{v_1 v_3}{\omega_6\omega_{13}\omega_9^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = (2\omega_1^2 v_1^2 + 2\omega_1\omega_2 v_3^2 - 3\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 4\omega_2^2 v_3^2 - 4\omega_1 v_1^2\omega_2 + 2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_2^2 + 12c_s^2\omega_1^2 - 3\omega_1^2\omega_2 v_3^2 - 6c_s^2\omega_1\omega_2 + 2v_1^2\omega_2^2 + 2\omega_2^2 + 2\omega_1^2 v_3^2 + 3\omega_1\omega_2^2 v_3^2)\frac{v_1 v_3}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}^2_x \mathrm{D}_z v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^2 \partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = (3\omega_6\omega_{13}v_1^2 + 3\omega_6 v_1^2\omega_9^2 + \omega_9^2 - \omega_6\omega_{13}c_s^2\omega_9 - \omega_6 c_s^2\omega_9 - \omega_6\omega_{13} - \omega_6\omega_9^2 + \omega_6\omega_{13}c_s^2 + 3\omega_{13}v_1^2\omega_9 - 3v_1^2\omega_9^2 - \omega_{13}\omega_9 - c_s^2\omega_9^2 + \omega_{13}c_s^2\omega_9 + \omega_6\omega_9 + \omega_6\omega_{13}\omega_9 - 3\omega_6 v_1^2\omega_9 - 3\omega_6\omega_{13}v_1^2\omega_9 + \omega_6 c_s^2\omega_9^2)\frac{\rho v_3}{\omega_6\omega_{13}\omega_9^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_1} = (3\omega_3 c_s^2\omega_1\omega_2^2 + 6\omega_3 v_1^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - 2\omega_1\omega_2^2 + 2\omega_3\omega_1^2 v_3^2 - 6c_s^2\omega_1^2\omega_2 + \omega_3\omega_1^2\omega_2 + \omega_3\omega_1\omega_2^2 v_3^2 - \omega_3\omega_1^2\omega_2 v_3^2 - 4\omega_3 c_s^2\omega_1\omega_2 - 4\omega_3 c_s^2\omega_2^2 + 2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + 6c_s^2\omega_1\omega_2^2 + 4\omega_3\omega_1\omega_2 - 12\omega_3\omega_1 v_1^2\omega_2 - \omega_3\omega_1\omega_2^2 - 2\omega_1^2\omega_2 v_3^2 + 6\omega_3\omega_1^2 v_1^2 - 2\omega_3\omega_2^2 v_3^2 - 4\omega_3\omega_1^2 + 2\omega_1\omega_2^2 v_3^2)\frac{\rho v_3}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (12 - 12v_1^2 + 36c_s^2\omega + 3\omega^2 - 3\omega^2 v_1^2 - 11c_s^2\omega^2 - 12\omega + 12\omega v_1^2 - 36c_s^2)\frac{\rho v_1}{12\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (12\omega_6^2\omega_9 - 18\omega_6^2\omega_{13}c_s^2\omega_9 - 3\omega_6^2\omega_{13}v_1^2\omega_9^2 + 6\omega_6^2\omega_{13}\omega_9 + 12\omega_6^2 c_s^2\omega_9^2 - 12\omega_6^2 v_1^2\omega_9 - 12\omega_6^2 c_s^2\omega_9 + 12\omega_6^2 v_1^2\omega_9^2 + 3\omega_6^2\omega_{13}\omega_9^2 - 11\omega_6^2\omega_{13}c_s^2\omega_9^2 + 36\omega_6^2\omega_{13}c_s^2 - 6\omega_6^2\omega_{13}v_1^2\omega_9 - 12\omega_6^2\omega_{13} - 12\omega_6^2\omega_9^2 - 12\omega_6 v_1^2\omega_9^2 + 6\omega_6\omega_{13}v_1^2\omega_9^2 - 24\omega_6\omega_{13}c_s^2\omega_9 - 6\omega_6\omega_{13}\omega_9^2 + 12\omega_6\omega_9^2 - 24\omega_{13}c_s^2\omega_9^2 + 12\omega_6^2\omega_{13}v_1^2 + 42\omega_6\omega_{13}c_s^2\omega_9^2 - 12\omega_6 c_s^2\omega_9^2)\frac{\rho v_1}{12\omega_6^2\omega_{13}\omega_9^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (12\omega_6\omega_{13}v_1^2 + 12\omega_6 v_1^2\omega_9^2 + 12\omega_9^2 - 3\omega_6\omega_{13}v_1^2\omega_9^2 - 18\omega_6\omega_{13}c_s^2\omega_9 - 36\omega_6 c_s^2\omega_9 - 12\omega_6\omega_{13} + 3\omega_6\omega_{13}\omega_9^2 - 12\omega_6\omega_9^2 + 36\omega_6\omega_{13}c_s^2 - 12v_1^2\omega_9^2 + 18\omega_{13}c_s^2\omega_9^2 - 6\omega_{13}\omega_9^2 - 36c_s^2\omega_9^2 + 6\omega_{13}v_1^2\omega_9^2 + 12\omega_6\omega_9 + 6\omega_6\omega_{13}\omega_9 - 12\omega_6 v_1^2\omega_9 - 6\omega_6\omega_{13}v_1^2\omega_9 - 11\omega_6\omega_{13}c_s^2\omega_9^2 + 36\omega_6 c_s^2\omega_9^2)\frac{\rho v_1}{12\omega_6\omega_{13}\omega_9^2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (12\omega_4\omega_2 + 18\omega_4^2 c_s^2\omega_{12} - 6\omega_4 v_1^2\omega_2\omega_{12} + 12\omega_4^2 v_1^2\omega_2 + 36\omega_4^2 c_s^2\omega_2 - 12\omega_4^2 v_1^2 + 6\omega_4^2 v_1^2\omega_{12} - 11\omega_4^2 c_s^2\omega_2\omega_{12} + 3\omega_4^2\omega_2\omega_{12} + 36c_s^2\omega_2\omega_{12} + 12v_1^2\omega_2\omega_{12} - 36\omega_4 c_s^2\omega_2 + 6\omega_4\omega_2\omega_{12} - 3\omega_4^2 v_1^2\omega_2\omega_{12} - 6\omega_4^2\omega_{12} + 12\omega_4^2 - 12\omega_4^2\omega_2 - 12\omega_2\omega_{12} - 18\omega_4 c_s^2\omega_2\omega_{12} - 12\omega_4 v_1^2\omega_2 - 36\omega_4^2 c_s^2)\frac{\rho v_1}{12\omega_4^2\omega_2\omega_{12}}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (-36\omega_3 c_s^2\omega_1\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 18\omega_3\omega_4\omega_1\omega_2^2 v_3^2 + 12\omega_3\omega_4\omega_1^2 v_3^2 - 24\omega_4 c_s^2\omega_1\omega_2^2 - 4\omega_4\omega_1^2 v_1^2\omega_2 - 3\omega_3\omega_4\omega_1^2 v_1^2\omega_2^2 + 8\omega_3\omega_4 v_1^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 - 18\omega_3\omega_4\omega_1^2\omega_2 v_3^2 + 4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 16\omega_3\omega_4 c_s^2\omega_1^2 + 8\omega_4\omega_1\omega_2^2 - 2\omega_3\omega_4\omega_1^2 v_1^2\omega_2 + 16\omega_3\omega_4 c_s^2\omega_2^2 + 12\omega_3\omega_4 c_s^2\omega_1\omega_2^2 + 6\omega_4\omega_1^2 v_1^2\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 + 6\omega_3\omega_1^2 v_1^2\omega_2^2 - 12\omega_4 c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_4\omega_1\omega_2 - 6\omega_4\omega_1^2\omega_2^2 - 8\omega_4\omega_1 v_1^2\omega_2^2 - 12\omega_3\omega_1 v_1^2\omega_2^2 - 11\omega_3\omega_4 c_s^2\omega_1^2\omega_2^2 - 12\omega_3\omega_4 c_s^2\omega_1^2\omega_2 + 12\omega_3\omega_1\omega_2^2 - 24\omega_3\omega_4\omega_2^2 v_3^2 + 4\omega_4\omega_1^2\omega_2 + 12\omega_3\omega_4\omega_1\omega_2 v_3^2 - 8\omega_3\omega_4\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 - 8\omega_3\omega_4\omega_1^2 + 2\omega_3\omega_4\omega_1 v_1^2\omega_2^2 + 18\omega_4 c_s^2\omega_1^2\omega_2^2 + 4\omega_3\omega_4\omega_1^2 v_1^2)\frac{\rho v_1}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = (v_2^2\omega_2^2 - 2\omega_1\omega_2 v_3^2 + \omega_2^2 v_3^2 + 4\omega_1\omega_2 - 2\omega_1^2 + 6c_s^2\omega_2^2 - 2\omega_1 v_2^2\omega_2 + 6c_s^2\omega_1^2 - 12c_s^2\omega_1\omega_2 + \omega_1^2 v_2^2 - 2\omega_2^2 + \omega_1^2 v_3^2)\frac{v_2 v_3}{3\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = (\omega_5^2 - \omega_6\omega_5^2 - \omega_6\omega_8 + \omega_6\omega_5 + \omega_6\omega_8\omega_5 - \omega_8\omega_5)\frac{c_s^2\rho v_3}{\omega_6\omega_8\omega_5^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = (18\omega_3 c_s^2\omega_1\omega_2^2 + \omega_3\omega_4\omega_1\omega_2^2 v_3^2 + 2\omega_3\omega_4\omega_1^2 v_3^2 + 6\omega_3\omega_4\omega_1^2 v_2^2 - 12\omega_4 c_s^2\omega_1\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 - \omega_3\omega_4\omega_1^2\omega_2 v_3^2 - 4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 8\omega_3\omega_4 c_s^2\omega_1^2 + 4\omega_4\omega_1\omega_2^2 - 4\omega_4\omega_1\omega_2^2 v_3^2 - 12\omega_3\omega_4\omega_1 v_2^2\omega_2 - 4\omega_3\omega_4 c_s^2\omega_2^2 + 6\omega_3\omega_1\omega_2^2 v_3^2 + 3\omega_3\omega_4 c_s^2\omega_1\omega_2^2 - 2\omega_4\omega_1^2\omega_2 v_3^2 + \omega_3\omega_4\omega_1^2\omega_2 + 3\omega_4\omega_1^2\omega_2^2 v_3^2 - 6\omega_4 c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1\omega_2 - 3\omega_3\omega_1^2\omega_2^2 v_3^2 - 3\omega_4\omega_1^2\omega_2^2 - 3\omega_3\omega_4 c_s^2\omega_1^2\omega_2 - 6\omega_3\omega_1\omega_2^2 - 2\omega_3\omega_4\omega_2^2 v_3^2 + 2\omega_4\omega_1^2\omega_2 - \omega_3\omega_4\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1^2 + 6\omega_3\omega_4 v_2^2\omega_2^2 + 9\omega_4 c_s^2\omega_1^2\omega_2^2)\frac{\rho v_3}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = (-\omega_6\omega_8 + \omega_6\omega_5 + \omega_6^2 - \omega_6^2\omega_5 + \omega_6\omega_8\omega_5 - \omega_8\omega_5)\frac{c_s^2\rho v_2}{\omega_6^2\omega_8\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = (18\omega_3 c_s^2\omega_1\omega_2^2 + 6\omega_3\omega_4\omega_1^2 v_3^2 + 2\omega_3\omega_4\omega_1^2 v_2^2 - 12\omega_4 c_s^2\omega_1\omega_2^2 + \omega_3\omega_4\omega_1 v_2^2\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 - 4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 8\omega_3\omega_4 c_s^2\omega_1^2 + 4\omega_4\omega_1\omega_2^2 - 4\omega_3\omega_4 c_s^2\omega_2^2 + 3\omega_3\omega_4 c_s^2\omega_1\omega_2^2 - 4\omega_4\omega_1 v_2^2\omega_2^2 + \omega_3\omega_4\omega_1^2\omega_2 + 6\omega_3\omega_1 v_2^2\omega_2^2 - 6\omega_4 c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1\omega_2 - \omega_3\omega_4\omega_1^2 v_2^2\omega_2 - 3\omega_4\omega_1^2\omega_2^2 + 3\omega_4\omega_1^2 v_2^2\omega_2^2 - 3\omega_3\omega_1^2 v_2^2\omega_2^2 - 3\omega_3\omega_4 c_s^2\omega_1^2\omega_2 - 6\omega_3\omega_1\omega_2^2 + 6\omega_3\omega_4\omega_2^2 v_3^2 + 2\omega_4\omega_1^2\omega_2 - 2\omega_4\omega_1^2 v_2^2\omega_2 - 12\omega_3\omega_4\omega_1\omega_2 v_3^2 - \omega_3\omega_4\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1^2 - 2\omega_3\omega_4 v_2^2\omega_2^2 + 9\omega_4 c_s^2\omega_1^2\omega_2^2)\frac{\rho v_2}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_2^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = (\omega_5^2 - \omega_6\omega_5^2 - \omega_6\omega_8 + \omega_6\omega_5 + \omega_6\omega_8\omega_5 - \omega_8\omega_5)\frac{c_s^2\rho v_3}{\omega_6\omega_8\omega_5^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = (-2\omega_3 - 6\omega_4 c_s^2 - \omega_4\omega_1 + \omega_4\omega_1 v_3^2 - 2\omega_4 v_3^2 - 3\omega_3 c_s^2\omega_1 + 2\omega_4 + \omega_3\omega_1 + 2\omega_3 v_3^2 - \omega_3\omega_1 v_3^2 + 6\omega_3 c_s^2 + 3\omega_4 c_s^2\omega_1)\frac{\rho v_3}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = \frac{-c_s^2\rho v_1}{6}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (-6\omega_6\omega_7\omega_5 - \omega_6\omega_7\omega_8\omega_5 + 6\omega_7\omega_5 - 6\omega_6\omega_8 + 6\omega_6\omega_7 + 6\omega_6\omega_8\omega_5 - 6\omega_8\omega_5)\frac{c_s^2\rho v_1}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (-12-\omega^2+12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (-12+12\omega_6-\omega_6^2)\frac{c_s^4}{6\omega_6^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (-12+12\omega_2-\omega_2^2)\frac{c_s^4}{6\omega_2^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (-3\omega_1^2\omega_2 v_3^4 - c_s^4\omega_1^2\omega_2^2 - 14c_s^4\omega_2^2 - 2\omega_1\omega_2 v_3^2 + 2\omega_1^2 v_3^4 + 3\omega_1\omega_2^2 v_3^4 + 2c_s^2\omega_1^2\omega_2 + 4\omega_2^2 v_3^2 + 12c_s^2\omega_1^2 v_3^2 + 2c_s^4\omega_1^2 + 6c_s^2\omega_1\omega_2 v_3^2 - 2c_s^4\omega_1^2\omega_2 - 18c_s^2\omega_2^2 v_3^2 + 15c_s^2\omega_1\omega_2^2 v_3^2 - 15c_s^2\omega_1^2\omega_2 v_3^2 - 2c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_2^2 - 2c_s^2\omega_1^2 + 2\omega_1\omega_2 v_3^4 + 3\omega_1^2\omega_2 v_3^2 + 14c_s^4\omega_1\omega_2^2 - 4\omega_2^2 v_3^4 - 2\omega_1^2 v_3^2 - 3\omega_1\omega_2^2 v_3^2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = \frac{-c_s^2\rho v_1}{6}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (-12\omega_6^2\omega_9 - \omega_6^2\omega_{13}\omega_9 + 12\omega_6^2 - 12\omega_6\omega_{13} - 12\omega_{13}\omega_9 + 12\omega_6\omega_9 + 12\omega_6\omega_{13}\omega_9)\frac{c_s^2\rho v_1}{6\omega_6^2\omega_{13}\omega_9}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = (2\omega_6 - \omega_6^2 + \omega_6\omega_{18} - 2\omega_{18})\frac{c_s^2\rho v_3}{\omega_6^2\omega_{18}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = (6\omega_1\omega_2 v_3^2 - 5\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 14\omega_2^2 v_3^2 - 2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 10c_s^2\omega_2^2 + 8c_s^2\omega_1^2 - 11\omega_1^2\omega_2 v_3^2 + 2c_s^2\omega_1\omega_2 + 6\omega_2^2 + 8\omega_1^2 v_3^2 + 11\omega_1\omega_2^2 v_3^2)\frac{\rho v_3}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_2 \partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = (-\omega_6\omega_8 + \omega_6\omega_5 + \omega_6^2 - \omega_6^2\omega_5 + \omega_6\omega_8\omega_5 - \omega_8\omega_5)\frac{c_s^2\rho v_2}{\omega_6^2\omega_8\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = (-2\omega_3 - 6\omega_4 c_s^2 - 2\omega_4 v_2^2 - \omega_4\omega_1 + \omega_4\omega_1 v_2^2 - 3\omega_3 c_s^2\omega_1 + 2\omega_4 + \omega_3\omega_1 + 2\omega_3 v_2^2 - \omega_3\omega_1 v_2^2 + 6\omega_3 c_s^2 + 3\omega_4 c_s^2\omega_1)\frac{\rho v_2}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2 \partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = \frac{-c_s^2\rho v_1}{6}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (-6\omega_6\omega_7\omega_5 - \omega_6\omega_7\omega_8\omega_5 + 6\omega_7\omega_5 - 6\omega_6\omega_8 + 6\omega_6\omega_7 + 6\omega_6\omega_8\omega_5 - 6\omega_8\omega_5)\frac{c_s^2\rho v_1}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

coefficient $C^{(1)}_{\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^3 \rho}{\partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^3\rho} = (-1 + 3c_s^2 + v_3^2)\frac{v_1 v_3}{12}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho} = (3\omega_6 c_s^2\omega_{11}\omega_{18} - 6\omega_6\omega_{11} + 18\omega_6 c_s^2\omega_{11} - 6\omega_6 v_3^2\omega_{18} - 36c_s^2\omega_{11} + 12v_3^2\omega_{18} + 12\omega_{11} + 6\omega_6\omega_{11}v_3^2 + \omega_6\omega_{11}v_3^2\omega_{18} - 12\omega_{11}v_3^2 + 6\omega_6\omega_{18} - \omega_6\omega_{11}\omega_{18} - 12\omega_{18} - 18\omega_6 c_s^2\omega_{18} + 36c_s^2\omega_{18})\frac{v_1 v_3}{12\omega_6\omega_{11}\omega_{18}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

coefficient $C^{(1)}_{\mathrm{D}_z^3 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_1} = (6 + 18c_s^2\omega + \omega^2 + 6\omega v_3^2 - 3c_s^2\omega^2 - 6\omega - \omega^2 v_3^2 - 18c_s^2 - 6v_3^2)\frac{\rho v_3}{6\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_z v_1} = (3\omega_6^2 v_3^2 + 6\omega_6 - 3\omega_6^2 c_s^2\omega_{18} + 3\omega_6^2 c_s^2 + 3\omega_6 v_3^2\omega_{18} + \omega_6^2\omega_{18} - 3\omega_6^2 - \omega_6^2 v_3^2\omega_{18} - 6\omega_6 c_s^2 - 3\omega_6\omega_{18} + 15\omega_6 c_s^2\omega_{18} - 6\omega_6 v_3^2 - 12c_s^2\omega_{18})\frac{\rho v_3}{6\omega_6^2\omega_{18}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_z v_1} = (6 - 3\omega_6 - \omega_6 v_3^2\omega_{18} + 3v_3^2\omega_{18} + 9\omega_6 c_s^2 + \omega_6\omega_{18} - 18c_s^2 - 3\omega_{18} - 3\omega_6 c_s^2\omega_{18} + 3\omega_6 v_3^2 + 9c_s^2\omega_{18} - 6v_3^2)\frac{\rho v_3}{6\omega_6\omega_{18}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_z v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_z v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_z v_1} = (6 + 9c_s^2\omega_8 + \omega_8\omega_2 + 3\omega_8 v_3^2 - 3\omega_8 - 3c_s^2\omega_8\omega_2 - 18c_s^2 - 3\omega_2 + 3\omega_2 v_3^2 + 9c_s^2\omega_2 - \omega_8\omega_2 v_3^2 - 6v_3^2)\frac{\rho v_3}{6\omega_8\omega_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_z v_1} = (6\omega_3 - 18\omega_4 c_s^2 - 3\omega_4\omega_1 - 6\omega_3\omega_4 c_s^2\omega_1 + 3\omega_4\omega_1 v_3^2 - 6\omega_4 v_3^2 + 9\omega_3 c_s^2\omega_1 + 6\omega_4 - 3\omega_3\omega_1 + 6\omega_3\omega_4 v_3^2 + 2\omega_3\omega_4\omega_1 - 6\omega_3 v_3^2 - 6\omega_3\omega_4 + 3\omega_3\omega_1 v_3^2 + 18\omega_3\omega_4 c_s^2 - 18\omega_3 c_s^2 - 2\omega_3\omega_4\omega_1 v_3^2 + 9\omega_4 c_s^2\omega_1)\frac{\rho v_3}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}^3_z v_3}$ at $\frac{\partial^3 v_3}{\partial x_3^3}$:

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_3} = (-1 + c_s^2 + 3v_3^2)\frac{\rho v_1}{12}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_z v_3} = (\omega_6 c_s^2\omega_{11}\omega_{18} - 6\omega_6\omega_{11} + 6\omega_6 c_s^2\omega_{11} - 18\omega_6 v_3^2\omega_{18} - 12c_s^2\omega_{11} + 36v_3^2\omega_{18} + 12\omega_{11} + 18\omega_6\omega_{11}v_3^2 + 3\omega_6\omega_{11}v_3^2\omega_{18} - 36\omega_{11}v_3^2 + 6\omega_6\omega_{18} - \omega_6\omega_{11}\omega_{18} - 12\omega_{18} - 6\omega_6 c_s^2\omega_{18} + 12c_s^2\omega_{18})\frac{\rho v_1}{12\omega_6\omega_{11}\omega_{18}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

coefficient $C^{(1)}_{\mathrm{D}^4_x \rho}$ at $\frac{\partial^4 \rho}{\partial x_1^4}$:

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^4_x \rho} = (12 - 156v_1^2 + 10\omega^3 v_1^2 + 198c_s^2\omega - 1008c_s^2\omega v_1^2 - \omega^3 + 8\omega^2 + 6c_s^2\omega^3 - 98\omega^2 v_1^2 + 672c_s^2 v_1^2 - 78c_s^2\omega^2 + 144c_s^4 - 216\omega v_1^4 + 90\omega^2 v_1^4 - 18\omega - 34c_s^2\omega^3 v_1^2 + 234\omega v_1^2 - 216c_s^4\omega - 132c_s^2 - 9\omega^3 v_1^4 + 82c_s^4\omega^2 + 144v_1^4 - 5c_s^4\omega^3 + 404c_s^2\omega^2 v_1^2)\frac{v_1}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho} = (12 - 156v_1^2 - 216c_s^4\omega_9 + 90v_1^4\omega_9^2 + 404c_s^2 v_1^2\omega_9^2 - 9v_1^4\omega_9^3 - 34c_s^2 v_1^2\omega_9^3 + 672c_s^2 v_1^2 - 5c_s^4\omega_9^3 - 1008c_s^2 v_1^2\omega_9 + 144c_s^4 + 82c_s^4\omega_9^2 - 216v_1^4\omega_9 + 8\omega_9^2 + 10v_1^2\omega_9^3 + 198c_s^2\omega_9 - 98v_1^2\omega_9^2 - \omega_9^3 - 132c_s^2 + 144v_1^4 - 78c_s^2\omega_9^2 + 234v_1^2\omega_9 - 18\omega_9 + 6c_s^2\omega_9^3)\frac{v_1}{12\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^4_x \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_x \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^4_x \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^4_x \rho} = (12 - 156v_1^2 - 1008\omega_4 c_s^2 v_1^2 + 10\omega_4^3 v_1^2 + 198\omega_4 c_s^2 + 82\omega_4^2 c_s^4 - 98\omega_4^2 v_1^2 + 672c_s^2 v_1^2 - 18\omega_4 + 144c_s^4 - 216\omega_4 v_1^4 - 5\omega_4^3 c_s^4 - 34\omega_4^3 c_s^2 v_1^2 + 90\omega_4^2 v_1^4 - \omega_4^3 + 234\omega_4 v_1^2 + 6\omega_4^3 c_s^2 + 8\omega_4^2 - 132c_s^2 + 404\omega_4^2 c_s^2 v_1^2 - 9\omega_4^3 v_1^4 - 216\omega_4 c_s^4 + 144v_1^4 - 78\omega_4^2 c_s^2)\frac{v_1}{12\omega_4^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^4_x \rho} = (-80\omega_3 c_s^2\omega_1\omega_2^2 - 10\omega_3\omega_1^3\omega_2 - 1472\omega_3 c_s^2\omega_1 v_1^2\omega_2^3 + 16\omega_3\omega_1^2\omega_2^3 - 48c_s^4\omega_1^2\omega_2^2 - 104\omega_3\omega_1^2 v_1^2\omega_2 + 168\omega_3\omega_1 v_1^4\omega_2^2 - 84\omega_3\omega_1^3 v_1^4\omega_2 - 464\omega_3 c_s^2\omega_1^3 v_1^2\omega_2 - 160\omega_3 v_1^2\omega_2^3 - 16\omega_3\omega_1^2\omega_2^2 + 656\omega_3 c_s^2\omega_1 v_1^2\omega_2^2 + 320\omega_3 c_s^2\omega_1\omega_2^3 + 24c_s^4\omega_1^3\omega_2 - 52\omega_3 c_s^2\omega_1^3 - 300\omega_3\omega_1 v_1^4\omega_2^3 + 16c_s^2\omega_1^2\omega_2^2 + 72\omega_3 c_s^4\omega_1\omega_2^2 - 27\omega_3\omega_1^3 v_1^4\omega_2^3 + 160\omega_3 c_s^2\omega_1^3 v_1^2 + 8c_s^2\omega_1 v_1^2\omega_2^3 + 404\omega_3 c_s^2\omega_1^3 v_1^2\omega_2^2 - 196\omega_3\omega_1^2 v_1^2\omega_2^3 + 24\omega_3\omega_1^3 v_1^4 + 8\omega_3\omega_1^2\omega_2 - 184\omega_3 c_s^2\omega_2^3 - 3\omega_3\omega_1^3\omega_2^3 + 90\omega_3\omega_1^3 v_1^4\omega_2^2 - 372\omega_3 c_s^4\omega_1\omega_2^3 + 8c_s^2\omega_1^3 v_1^2\omega_2 - 8c_s^2\omega_1^3\omega_2 + 8\omega_3\omega_1^3\omega_2^2 + 280\omega_3\omega_1^2 v_1^2\omega_2^2 - 102\omega_3 c_s^2\omega_1^3 v_1^2\omega_2^3 - 28\omega_3\omega_1^3 v_1^2 + 144\omega_3 v_1^4\omega_2^3 - 8c_s^2\omega_1\omega_2^3 - 156\omega_3 c_s^4\omega_1^3\omega_2 + 164\omega_3 c_s^4\omega_1^2\omega_2^3 + 18\omega_3 c_s^2\omega_1^3\omega_2^3 - 80\omega_3 c_s^2\omega_1^2\omega_2 + 440\omega_3 c_s^2\omega_1^2 v_1^2\omega_2 + 72\omega_3 c_s^4\omega_1^3 + 328\omega_3\omega_1 v_1^2\omega_2^3 - 120\omega_3 c_s^4\omega_1^2\omega_2^2 - 16c_s^2\omega_1^2 v_1^2\omega_2^2 + 96\omega_3\omega_1^2 v_1^4\omega_2 - 176\omega_3\omega_1 v_1^2\omega_2^2 + 94\omega_3\omega_1^3 v_1^2\omega_2 - 78\omega_3 c_s^2\omega_1^3\omega_2^2 + 16\omega_3\omega_2^3 + 808\omega_3 c_s^2\omega_1^2 v_1^2\omega_2^3 - 156\omega_3 c_s^2\omega_1^2\omega_2^3 -$

$98\omega_3\omega_1^3v_1^2\omega_2^2 + 8\omega_3\omega_1\omega_2^2 + 24c_s^4\omega_1\omega_2^3 + 122\omega_3c_s^2\omega_1^3\omega_2 + 72\omega_3c_s^4\omega_1^2\omega_2 - 15\omega_3c_s^4\omega_1^3\omega_2^3 + 4\omega_3\omega_1^3 - 264\omega_3\omega_1^2v_1^4\omega_2^2 - 28\omega_3\omega_1\omega_2^3 + 152\omega_3c_s^2\omega_1^2\omega_2^2 + 30\omega_3\omega_1^3v_1^2\omega_2^3 - 1088\omega_3c_s^2\omega_1^2v_1^2\omega_2^2 + 760\omega_3c_s^2v_1^2\omega_2^3 + 180\omega_3\omega_1^2v_1^4\omega_2^3 + 216\omega_3c_s^4\omega_2^3 + 82\omega_3c_s^4\omega_1^3\omega_2^2)\frac{v_1}{36\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^4 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^4 v_1} = (12 - 252v_1^2 + 14\omega^3v_1^2 + 54c_s^2\omega - 648c_s^2\omega v_1^2 - \omega^3 + 8\omega^2 + 2c_s^2\omega^3 - 154\omega^2v_1^2 + 432c_s^2v_1^2 - 22c_s^2\omega^2 + 24c_s^4 - 756\omega v_1^4 + 310\omega^2v_1^4 - 18\omega - 18c_s^2\omega^3v_1^2 + 378\omega v_1^2 - 36c_s^4\omega - 36c_s^2 - 29\omega^3v_1^4 + 14c_s^4\omega^2 + 504v_1^4 - c_s^4\omega^3 + 252c_s^2\omega^2v_1^2)\frac{\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_1} = (12 - 252v_1^2 - 36c_s^4\omega_9 + 310v_1^4\omega_9^2 + 252c_s^2v_1^2\omega_9^2 - 29v_1^4\omega_9^3 - 18c_s^2v_1^2\omega_9^3 + 432c_s^2v_1^2 - c_s^4\omega_9^3 - 648c_s^2v_1^2\omega_9 + 24c_s^4 + 14c_s^4\omega_9^2 - 756v_1^4\omega_9 + 8\omega_9^2 + 14v_1^2\omega_9^3 + 54c_s^2\omega_9 - 154v_1^2\omega_9^2 - \omega_9^3 - 36c_s^2 + 504v_1^4 - 22c_s^2\omega_9^2 + 378v_1^2\omega_9 - 18\omega_9 + 2c_s^2\omega_9^3)\frac{\rho}{12\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^4 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^4 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^4 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^4 v_1} = (12 - 252v_1^2 - 648\omega_4c_s^2v_1^2 + 14\omega_4^3v_1^2 + 54\omega_4c_s^2 + 14\omega_4^2c_s^4 - 154\omega_4^2v_1^2 + 432c_s^2v_1^2 - 18\omega_4 + 24c_s^4 - 756\omega_4v_1^4 - \omega_4^3c_s^4 - 18\omega_4^3c_s^2v_1^2 + 310\omega_4^2v_1^4 - \omega_4^3 + 378\omega_4v_1^2 + 2\omega_4^3c_s^2 + 8\omega_4^2 - 36c_s^2 + 252\omega_4^2c_s^2v_1^2 - 29\omega_4^3v_1^4 - 36\omega_4c_s^4 + 504v_1^4 - 22\omega_4^2c_s^2)\frac{\rho}{12\omega_4^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^4 v_1} = (-16\omega_3c_s^2\omega_1\omega_2^2 - 10\omega_3\omega_1^3\omega_2 - 1008\omega_3c_s^2\omega_1v_1^2\omega_2^3 + 16\omega_3\omega_1^2\omega_2^3 - 16c_s^4\omega_1^2\omega_2^2 - 168\omega_3\omega_1^2v_1^2\omega_2 + 552\omega_3\omega_1v_1^4\omega_2^2 - 312\omega_3\omega_1^3v_1^4\omega_2 - 360\omega_3c_s^2\omega_1^3v_1^2\omega_2 - 288\omega_3v_1^2\omega_2^3 - 16\omega_3\omega_1^2\omega_2^2 + 336\omega_3c_s^2\omega_1v_1^2\omega_2^2 + 96\omega_3c_s^2\omega_1\omega_2^3 + 8c_s^4\omega_1^3\omega_2 - 20\omega_3c_s^2\omega_1^3 - 1068\omega_3\omega_1v_1^4\omega_2^3 + 16c_s^2\omega_1^2\omega_2^2 + 8\omega_3c_s^4\omega_1\omega_2^2 - 87\omega_3\omega_1^3v_1^4\omega_2^3 + 144\omega_3c_s^2\omega_1^3v_1^2 + 24c_s^2\omega_1v_1^2\omega_2^3 + 252\omega_3c_s^2\omega_1^3v_1^2\omega_2^2 - 308\omega_3\omega_1^2v_1^2\omega_2^3 + 96\omega_3\omega_1^3v_1^4 + 8\omega_3\omega_1^2\omega_2 - 56\omega_3c_s^2\omega_2^3 - 3\omega_3\omega_1^3\omega_2^3 + 310\omega_3\omega_1^3v_1^4\omega_2^2 - 68\omega_3c_s^4\omega_1\omega_2^3 + 24c_s^2\omega_1^3v_1^2\omega_2 - 8c_s^2\omega_1^3\omega_2 + 8\omega_3\omega_1^3\omega_2^2 + 408\omega_3\omega_1^2v_1^2\omega_2^2 - 54\omega_3c_s^2\omega_1^3v_1^2\omega_2^3 - 60\omega_3\omega_1^3v_1^2 + 528\omega_3v_1^4\omega_2^3 - 8c_s^2\omega_1\omega_2^3 - 32\omega_3c_s^4\omega_1^3\omega_2 + 28\omega_3c_s^4\omega_1^2\omega_2^3 + 6\omega_3c_s^2\omega_1^3\omega_2^3 - 16\omega_3c_s^2\omega_1^2\omega_2 + 264\omega_3c_s^2\omega_1^2v_1^2\omega_2 + 16\omega_3c_s^4\omega_1^3 + 552\omega_3\omega_1v_1^2\omega_2^3 - 8\omega_3c_s^4\omega_1^2\omega_2^2 - 48c_s^2\omega_1^2v_1^2\omega_2^2 + 336\omega_3\omega_1^2v_1^4\omega_2 - 240\omega_3\omega_1v_1^2\omega_2^2 + 174\omega_3\omega_1^3v_1^2\omega_2 - 22\omega_3c_s^2\omega_1^3\omega_2^2 + 16\omega_3\omega_2^3 + 504\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 - 44\omega_3c_s^2\omega_1^2\omega_2^3 - 154\omega_3\omega_1^3v_1^2\omega_2^2 + 8\omega_3\omega_1\omega_2^2 + 8c_s^4\omega_1\omega_2^3 + 42\omega_3c_s^2\omega_1^3\omega_2 + 8\omega_3c_s^4\omega_1^2\omega_2 - 3\omega_3c_s^4\omega_1^3\omega_2^3 + 4\omega_3\omega_1^3 - 888\omega_3\omega_1^2v_1^4\omega_2^2 - 28\omega_3\omega_1\omega_2^3 + 24\omega_3c_s^2\omega_1^2\omega_2^2 + 42\omega_3\omega_1^3v_1^2\omega_2^3 - 576\omega_3c_s^2\omega_1^2v_1^2\omega_2^2 + 552\omega_3c_s^2v_1^2\omega_2^3 + 620\omega_3\omega_1^2v_1^4\omega_2^3 + 40\omega_3c_s^4\omega_2^3 + 14\omega_3c_s^4\omega_1^3\omega_2^2)\frac{\rho}{36\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_y \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1^3 \partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y \rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y \rho} = (4c_s^2\omega_5^2\omega_9 - 4c_s^2\omega_9^2\omega_{12}^2 - 4c_s^4\omega_5^2\omega_9^3\omega_{12} + 4c_s^4\omega_5\omega_9\omega_{12}^2 - 48c_s^2v_1^2\omega_5\omega_9^2\omega_{12} - 8c_s^2\omega_5^2\omega_{12}^2 - 20v_1^4\omega_5\omega_9^2\omega_{12}^2 + 4c_s^4\omega_5^2\omega_9^2\omega_{12}^2 + 4c_s^2\omega_9^3\omega_{12} - 72c_s^2v_1^2\omega_5^2\omega_9\omega_{12} - 32v_1^2\omega_5^2\omega_9^2\omega_{12} - 4c_s^2\omega_5^2\omega_9^3 + 4v_1^2\omega_5\omega_9^3 + 20v_1^4\omega_5\omega_9^3\omega_{12} - 36v_1^4\omega_5^2\omega_9\omega_{12}^2 + 4c_s^2\omega_5^2\omega_9\omega_{12} - 24c_s^2v_1^2\omega_5\omega_9^3 - 4c_s^4\omega_5^2\omega_9^2 - 20v_1^4\omega_5^2\omega_9\omega_{12} + 12c_s^2\omega_5^2\omega_9\omega_{12}^2 + 4c_s^4\omega_9^2\omega_{12}^2 - 8c_s^2\omega_5\omega_9^3\omega_{12} + 8c_s^4\omega_5^2\omega_9^2\omega_{12} + 84c_s^2v_1^2\omega_5\omega_9^3\omega_{12} - 144c_s^2v_1^2\omega_5^2\omega_9\omega_{12}^2 - 13v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 8c_s^4\omega_5^2\omega_{12}^2 - 4c_s^4\omega_9^3\omega_{12} + 8c_s^2\omega_5\omega_9^2\omega_{12}^2 + 4c_s^4\omega_5^2\omega_9^3 - 16v_1^4\omega_5\omega_9^2\omega_{12} - 4v_1^4\omega_5\omega_9^3 - 20v_1^2\omega_5\omega_9\omega_{12}^2 + 13v_1^2\omega_5^2\omega_9^3\omega_{12} - 84c_s^2v_1^2\omega_5\omega_9^2\omega_{12}^2 - 4c_s^2\omega_5\omega_9\omega_{12}^2 + 4c_s^2\omega_5^2\omega_9^3\omega_{12} + 36c_s^2v_1^2\omega_9^2\omega_{12}^2 - 4c_s^4\omega_5\omega_9^3 - 24c_s^2v_1^2\omega_5^2\omega_9^2 + 96c_s^2v_1^2\omega_5^2\omega_{12}^2 + 4v_1^4\omega_5^2\omega_9^3 + 20v_1^2\omega_5\omega_9^2\omega_{12}^2 - 51c_s^2v_1^2\omega_5^2\omega_9^3\omega_{12} + 72c_s^2v_1^2\omega_5\omega_9\omega_{12}^2 - 8v_1^4\omega_9^3\omega_{12} + 32v_1^4\omega_5^2\omega_9^2\omega_{12} + 24v_1^4\omega_5^2\omega_{12}^2 + 24c_s^2v_1^2\omega_5^2\omega_9^3 - 4c_s^2\omega_5^2\omega_9^2\omega_{12}^2 - 36c_s^2v_1^2\omega_9^3\omega_{12} + 51c_s^2v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 4c_s^4\omega_5^2\omega_9\omega_{12} + 8v_1^4\omega_9^2\omega_{12}^2 - 4v_1^4\omega_5^2\omega_9^2 + 36v_1^2\omega_5^2\omega_9\omega_{12}^2 - 20v_1^2\omega_5\omega_9^3\omega_{12} + 120c_s^2v_1^2\omega_5^2\omega_9^2\omega_{12} + 8c_s^4\omega_5\omega_9^3\omega_{12} - 12c_s^4\omega_5^2\omega_9\omega_{12}^2 + 4c_s^2\omega_5\omega_9^3 + 20v_1^2\omega_5^2\omega_9\omega_{12} + 13v_1^4\omega_5^2\omega_9^2\omega_{12}^2 - 4v_1^2\omega_5^2\omega_9^3 - 8c_s^2\omega_5^2\omega_9^2\omega_{12} + 8v_1^2\omega_9^3\omega_{12} - 24v_1^2\omega_5^2\omega_{12}^2 + 16v_1^2\omega_5\omega_9^2\omega_{12} - 8c_s^4\omega_5\omega_9^2\omega_{12}^2 - 8v_1^2\omega_9^2\omega_{12}^2 - 13v_1^4\omega_5^2\omega_9^3\omega_{12} + 20v_1^4\omega_5\omega_9\omega_{12}^2 + 4v_1^2\omega_5^2\omega_9^2)\frac{v_2}{4\omega_5^2\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y \rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y \rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y \rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y \rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y \rho} = (8\omega_3^2\omega_1\omega_2^2 - 18\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 + \omega_3^2\omega_1^2v_2^2\omega_2^3 - 60\omega_3^2\omega_1v_1^2\omega_2^3 - 24\omega_3^2\omega_1^2v_1^2v_2^2\omega_2^3 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 324\omega_3^2c_s^2\omega_1^3v_1^2\omega_2 - 84\omega_3^2c_s^4\omega_1^3\omega_2 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 + 12c_s^2\omega_1^3\omega_2^2 - 216\omega_3^2c_s^2\omega_1v_1^2\omega_2^2 - 2\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 + 84\omega_3^2\omega_1^3v_1^2\omega_2 + 8\omega_3^2v_2^2\omega_2^3 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 - 48\omega_3^2\omega_1^2v_1^2v_2^2\omega_2^2 + 48\omega_3^2\omega_1v_1^2\omega_2^2 + 36c_s^4\omega_1^2\omega_2^3 - 4\omega_3c_s^2\omega_1^2v_2^2\omega_2^2 - 8\omega_3c_s^2\omega_1\omega_2^3 + 8\omega_3^2\omega_1\omega_2^3 + 4\omega_3^2\omega_1^2v_2^2\omega_2^2 + 16\omega_3^2c_s^2\omega_1^3v_2^2 - 2\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2c_s^4\omega_2^3 + 108\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 - 48\omega_3^2\omega_1^3v_1^2v_2^2\omega_2 + 4\omega_3^2\omega_1^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2 - 72\omega_3^2v_1^2v_2^2\omega_2^3 + 24\omega_3^2\omega_1^3v_1^2v_2^2\omega_2^2 + 24\omega_3^2\omega_1^3v_1^2v_2^2 + 72\omega_3^2\omega_1^2v_1^4\omega_2^2 + 48\omega_3^2v_1^4\omega_2^3 - 36\omega_3^2c_s^4\omega_1^2\omega_2 + 12c_s^2\omega_1^2v_2^2\omega_2^3 - 48\omega_3^2\omega_1^3v_1^2 - 24\omega_3^2\omega_1^3v_1^2\omega_2^2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 + 72\omega_3^2c_s^4\omega_1^3 + 56\omega_3^2c_s^2\omega_1^3\omega_2 - 8\omega_3^2\omega_2^3 + 24\omega_3^2\omega_1^2v_1^2v_2^2\omega_2 - 36c_s^4\omega_1^3\omega_2^2 + 4\omega_3^2\omega_1^2v_2^2\omega_2 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 + 72\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 4\omega_3^2c_s^2\omega_1^2v_2^2\omega_2 - 12c_s^2\omega_1^2\omega_2^3 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 - 36\omega_3^2\omega_1^3v_1^4\omega_2 - 12\omega_3c_s^4\omega_1^3\omega_2 -$

$72\omega_3^2\omega_1 v_1^4\omega_2^2 - 54\omega_3 c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^2\omega_2 - 24\omega_3^2\omega_1^2 v_1^2\omega_2 + 20\omega_3^2 c_s^2\omega_2^3 - 8\omega_3^2 c_s^2\omega_1\omega_2^2 - \omega_3^2\omega_1^3 v_2^2\omega_2^2 + 18\omega_3 c_s^2\omega_1^3 v_2^2\omega_2^2 + 96\omega_3^2\omega_1 v_1^2 v_2^2\omega_2^3 + 24\omega_3^2\omega_1^3 v_1^4 - 12\omega_3 c_s^4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_1 v_1^4\omega_2^3 + 2\omega_3^2 c_s^2\omega_1^3 v_2^2\omega_2^2 - 4\omega_3^2\omega_1^3 v_2^2 + 24\omega_3^2\omega_1 v_1^2 v_2^2\omega_2^2 - 22\omega_3^2 c_s^2\omega_1\omega_2^3 - 20\omega_3^2 c_s^2 v_2^2\omega_2^3 - 18\omega_3 c_s^2\omega_1^3\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_1^2 v_1^2\omega_2^3 + 18\omega_3 c_s^2\omega_1^2\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 + 8\omega_3 c_s^2\omega_1 v_2^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 + 4\omega_3 c_s^2\omega_1^3\omega_2 - 8\omega_3^2\omega_1 v_2^2\omega_2^3 - 12c_s^2\omega_1^3 v_2^2\omega_2^2 + 8\omega_3^2 c_s^2\omega_1 v_2^2\omega_2^2 + 216\omega_3^2 c_s^2\omega_1^3 v_1^2 + 216\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_2^2 - 20\omega_3^2 c_s^2\omega_1^3 v_2^2\omega_2 - 8\omega_3^2\omega_1 v_2^2\omega_2^2 - 24\omega_3^2\omega_1^2 v_1^2\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 + 4\omega_3 c_s^2\omega_1^2\omega_2^2 - 4\omega_3 c_s^2\omega_1^3 v_2^2\omega_2 + 24\omega_3^2 v_1^2\omega_2^3 + 4\omega_3^2\omega_1^3 v_2^2\omega_2 + 42\omega_3^2 c_s^4\omega_1\omega_2^3 - 52\omega_3^2 c_s^2\omega_1^3 - 72\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_2^3 + 54\omega_3 c_s^4\omega_1^3\omega_2^2 + 22\omega_3^2 c_s^2\omega_1 v_2^2\omega_2^3)\frac{v_2}{36\omega_3^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (-16c_s^2\omega_5^2\omega_9^2 + 20c_s^2\omega_9^2\omega_{12}^2 + 28\omega_5\omega_9^2\omega_{12}^2 - 16c_s^2\omega_5\omega_9^2\omega_{12} + 48c_s^2\omega_5^2\omega_{12}^2 - 20c_s^2\omega_9^3\omega_{12} + 104v_1^2\omega_5^2\omega_9^2\omega_{12} + 16c_s^2\omega_5^2\omega_9^3 - 16v_1^2\omega_5\omega_9^3 + 48\omega_5^2\omega_9\omega_{12}^2 - 28\omega_5\omega_9^3\omega_{12} - 32c_s^2\omega_5^2\omega_9\omega_{12} + 24\omega_5^2\omega_9\omega_{12} - 72c_s^2\omega_5^2\omega_9\omega_{12}^2 + 44c_s^2\omega_5\omega_9^3\omega_{12} + 43v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 16\omega_5\omega_9^2\omega_{12} - 44c_s^2\omega_5\omega_9^2\omega_{12}^2 + 64v_1^2\omega_5\omega_9\omega_{12}^2 - 43v_1^2\omega_5^2\omega_9^3\omega_{12} + 8\omega_5\omega_9^3 + 32c_s^2\omega_5\omega_9\omega_{12}^2 - 25c_s^2\omega_5^2\omega_9^3\omega_{12} - 8\omega_5^2\omega_9^3 - 68v_1^2\omega_5\omega_9^2\omega_{12}^2 + 12\omega_9^3\omega_{12} - 32\omega_5^2\omega_{12}^2 + 25c_s^2\omega_5^2\omega_9^2\omega_{12}^2 - 40\omega_5^2\omega_9^2\omega_{12} - 12\omega_9^2\omega_{12}^2 - 120v_1^2\omega_5^2\omega_9\omega_{12}^2 + 8\omega_5^2\omega_9^2 + 68v_1^2\omega_5\omega_9^3\omega_{12} - 16c_s^2\omega_5\omega_9^3 - 64v_1^2\omega_5^2\omega_9\omega_{12} + 16v_1^2\omega_5^2\omega_9^3 + 56c_s^2\omega_5^2\omega_9^2\omega_{12} - 28v_1^2\omega_9^3\omega_{12} - 17\omega_5^2\omega_9^2\omega_{12}^2 + 80v_1^2\omega_5^2\omega_{12}^2 - 48v_1^2\omega_5\omega_9^2\omega_{12} + 28v_1^2\omega_9^2\omega_{12}^2 - 24\omega_5\omega_9\omega_{12}^2 + 17\omega_5^2\omega_9^3\omega_{12} - 16v_1^2\omega_5^2\omega_9^2)\frac{\rho v_1 v_2}{4\omega_5^2\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (-54\omega_3 c_s^2\omega_1\omega_2^2 + 5\omega_3\omega_1^3 v_2^2\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 - 12\omega_3\omega_1^2 v_1^2\omega_2 - 6\omega_1^2 v_2^2\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 + 84\omega_3 v_1^2\omega_2^3 - 51\omega_3\omega_1^2\omega_2^2 + 27w_3 c_s^2\omega_1\omega_2^3 - 12\omega_1\omega_2^3 + 84\omega_3 c_s^2\omega_1^3 - 9\omega_1^2 v_2^2\omega_2^3 - 18c_s^2\omega_1^2\omega_2^2 + 27\omega_3\omega_1 v_2^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 - 12\omega_3 c_s^2\omega_2^3 + 12\omega_3\omega_1^3 v_2^2 - 18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 - 5\omega_3\omega_1^3\omega_2^2 - 18\omega_3\omega_1^3 v_2^2\omega_2 + 6\omega_3\omega_1 v_2^2\omega_2^2 + 132\omega_3\omega_1^2 v_1^2\omega_2^2 + 48\omega_3\omega_1^3 v_1^2 + 36c_s^2\omega_1\omega_2^3 - 18\omega_3 c_s^2\omega_1^2\omega_2 - 5\omega_3\omega_1^2 v_2^2\omega_2^3 - 66\omega_3\omega_1 v_1^2\omega_2^3 - 9\omega_1^3\omega_2^2 + 9\omega_1^3 v_2^2\omega_2^2 - 120\omega_3\omega_1 v_1^2\omega_2^2 - 9\omega_3\omega_1^2 v_2^2\omega_2^2 - 66\omega_3\omega_1^3 v_1^2\omega_2 + 15\omega_3 c_s^2\omega_1^3\omega_2^2 - 12\omega_3\omega_2^3 + 6\omega_3\omega_1^2 v_2^2\omega_2 - 15\omega_3 c_s^2\omega_1^2\omega_2^3 + 42\omega_3\omega_1\omega_2^2 - 108\omega_3 c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 + 9\omega_1^2\omega_2^3 - 6\omega_1^3 v_2^2\omega_2 - 36\omega_3\omega_1^3 + 3\omega_3\omega_1\omega_2^3 + 81\omega_3 c_s^2\omega_1^2\omega_2^2 - 24\omega_3 v_2^2\omega_2^3 + 12\omega_1 v_2^2\omega_2^3 + 6\omega_1^2\omega_2^2)\frac{\rho v_1 v_2}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (36v_1^2 - 4\omega^3 v_1^2 + 36c_s^2\omega v_1^2 + 54c_s^2\omega v_1^2 + 26\omega^2 v_1^2 - 36c_s^2 v_1^2 - 12c_s^2\omega^2 + 36c_s^4 + 54\omega v_1^4 - 26\omega^2 v_1^4 + 12c_s^2\omega^3 v_1^2 - 54\omega v_1^2 - 54c_s^4\omega - 24c_s^2 + 4\omega^3 v_1^4 + 20c_s^4\omega^2 - 36v_1^4 - c_s^4\omega^3 - 42c_s^2\omega^2 v_1^2)\frac{\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (18v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 12c_s^4\omega_5^3\omega_{12}^2 + 60c_s^2 v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 18c_s^4\omega_5^2\omega_9^3\omega_{12} + 90v_1^2\omega_5^3\omega_9\omega_{12}^2 + 60v_1^4\omega_5^3\omega_9^2\omega_{12} + 12c_s^4\omega_9^3\omega_{12}^2 - c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 6c_s^4\omega_5^2\omega_9^2\omega_{12}^2 + 102c_s^2 v_1^2\omega_5\omega_9^3\omega_{12}^2 + 24v_1^2\omega_5^2\omega_9^2\omega_{12} - 21c_s^2 v_1^2\omega_5^3\omega_9^3\omega_{12} - 24v_1^4\omega_5\omega_9^3\omega_{12} - 6c_s^2\omega_5^3\omega_9^3\omega_{12} + 6c_s^2\omega_5\omega_9^3\omega_{12}^2 + 4v_1^4\omega_5^3\omega_9^3\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{12}^2 + 12v_1^4\omega_5\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9\omega_{12}^2 - 27v_1^4\omega_5^3\omega_9^3\omega_{12} - 12c_s^2\omega_5\omega_9^3\omega_{12} + 12c_s^4\omega_5^2\omega_9^2\omega_{12} - 12c_s^2 v_1^2\omega_5\omega_9^3\omega_{12} - 108c_s^2 v_1^2\omega_5^2\omega_9\omega_{12}^2 - 12v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 12c_s^2 v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 19v_1^4\omega_5^3\omega_9^2\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^2\omega_{12} - 12c_s^4\omega_5^3\omega_9\omega_{12}^2 - 48v_1^2\omega_5^2\omega_9^3\omega_{12} + 54c_s^2 v_1^2\omega_5^3\omega_9^2\omega_{12} + 36v_1^2\omega_5^3\omega_9\omega_{12} + 13c_s^4\omega_5^2\omega_9^2\omega_{12}^2 - 48c_s^2 v_1^2\omega_5\omega_9^2\omega_{12}^2 - 90v_1^4\omega_5^3\omega_9\omega_{12}^2 + 18c_s^2\omega_5^2\omega_9^3\omega_{12} - 12v_1^2\omega_5^3\omega_9^3 - 18v_1^4\omega_5^2\omega_9^3\omega_{12}^2 - 36c_s^2 v_1^2\omega_5^3\omega_9\omega_{12} + c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 12v_1^4\omega_5^2\omega_9^3 + 30c_s^2 v_1^2\omega_5^2\omega_9^3\omega_{12} - 60v_1^2\omega_5^3\omega_9^2\omega_{12} - 24v_1^4\omega_5^2\omega_9^2\omega_{12} + 12v_1^2\omega_5^3\omega_9^2 - 12c_s^2 v_1^2\omega_5^2\omega_9^3 - 6c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 162c_s^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 4v_1^2\omega_5^3\omega_9^3\omega_{12}^2 - 24c_s^4\omega_5\omega_9^3\omega_{12}^2 - 72v_1^2\omega_5^3\omega_{12}^2 + 6c_s^4\omega_5^3\omega_9^3\omega_{12} + 24v_1^2\omega_5\omega_9^3\omega_{12} - 12c_s^2 v_1^2\omega_5^2\omega_9^2\omega_{12} + 12c_s^4\omega_5\omega_9^3\omega_{12} + 27v_1^2\omega_5^3\omega_9^3\omega_{12} - 12c_s^4\omega_5^2\omega_9\omega_{12}^2 - 12v_1^2\omega_5\omega_9^3\omega_{12}^2 + 12v_1^4\omega_5^3\omega_9^3 - c_s^4\omega_5^3\omega_9^3\omega_{12}^2 + 252c_s^2 v_1^2\omega_5^3\omega_{12}^2 + 12v_1^4\omega_5^2\omega_9^2\omega_{12}^2 - 12c_s^2 v_1^2\omega_5^3\omega_9^3 + 12v_1^2\omega_5^2\omega_9^3 - 12c_s^2\omega_5^2\omega_9^2\omega_{12} - 48c_s^2 v_1^2\omega_9^3\omega_{12}^2 - 306c_s^2 v_1^2\omega_5^3\omega_9\omega_{12}^2 - 12v_1^4\omega_5^3\omega_9^2 - 6c_s^4\omega_5^3\omega_9^2\omega_{12} - 81c_s^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 19v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 5c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 36v_1^4\omega_5^3\omega_9\omega_{12} + 48v_1^4\omega_5^2\omega_9^3\omega_{12} + 12c_s^2\omega_5^3\omega_9\omega_{12}^2 + 12c_s^2 v_1^2\omega_5^3\omega_9^3 + 72v_1^4\omega_5^3\omega_{12}^2)\frac{\rho}{12\omega_5^3\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (6v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 12c_s^4\omega_5^3\omega_{12}^2 + 60c_s^2 v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 18c_s^4\omega_5^2\omega_9^3\omega_{12} + 90v_1^2\omega_5^3\omega_9\omega_{12}^2 + 72v_1^4\omega_5^3\omega_9^2\omega_{12} + 12c_s^4\omega_9^3\omega_{12}^2 - c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 6c_s^4\omega_5^2\omega_9^2\omega_{12}^2 - 18c_s^2 v_1^2\omega_5\omega_9^3\omega_{12}^2 - 99c_s^2 v_1^2\omega_5^3\omega_9^3\omega_{12} - 6c_s^2\omega_5^3\omega_9^3\omega_{12} + 6c_s^2\omega_5\omega_9^3\omega_{12}^2 + 4v_1^4\omega_5^3\omega_9^3\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9\omega_{12}^2 - 39v_1^4\omega_5^3\omega_9^3\omega_{12} - 12c_s^2\omega_5\omega_9^3\omega_{12} + 12c_s^4\omega_5^2\omega_9^2\omega_{12} + 36c_s^2 v_1^2\omega_5\omega_9^3\omega_{12} - 36c_s^2 v_1^2\omega_5^2\omega_9\omega_{12}^2 + 12c_s^2 v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 19v_1^4\omega_5^3\omega_9^2\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^2\omega_{12} - 12c_s^4\omega_5^3\omega_9\omega_{12}^2 - 36v_1^2\omega_5^2\omega_9^3\omega_{12} + 198c_s^2 v_1^2\omega_5^3\omega_9^2\omega_{12} + 36v_1^2\omega_5^3\omega_9\omega_{12} + 13c_s^4\omega_5^2\omega_9^3\omega_{12}^2 - 90v_1^4\omega_5^3\omega_9\omega_{12}^2 + 18c_s^2\omega_5^2\omega_9^3\omega_{12} - 36v_1^2\omega_5^3\omega_9^3 - 6v_1^4\omega_5^2\omega_9^3\omega_{12}^2 - 108c_s^2 v_1^2\omega_5^3\omega_9\omega_{12} + c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 36v_1^4\omega_5^2\omega_9^3 + 54c_s^2 v_1^2\omega_5^2\omega_9^3\omega_{12} - 72v_1^2\omega_5^3\omega_9^2\omega_{12} + 36v_1^2\omega_5^3\omega_9^2 - 108c_s^2 v_1^2\omega_5^2\omega_9^3 - 6c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 18c_s^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 4v_1^2\omega_5^3\omega_9^3\omega_{12}^2 - 24c_s^4\omega_5\omega_9^3\omega_{12}^2 - 72v_1^2\omega_5^3\omega_{12}^2 + 6c_s^4\omega_5^3\omega_9^3\omega_{12} + 36c_s^2 v_1^2\omega_5^2\omega_9^2\omega_{12} + 12c_s^4\omega_5\omega_9^3\omega_{12} + 39v_1^2\omega_5^3\omega_9^3\omega_{12} - 12c_s^4\omega_5^2\omega_9\omega_{12}^2 + 36v_1^4\omega_5^3\omega_9^3 - c_s^4\omega_5^3\omega_9^3\omega_{12}^2 + 252c_s^2 v_1^2\omega_5^3\omega_{12}^2 - 108c_s^2 v_1^2\omega_5^3\omega_9^2 + 36v_1^2\omega_5^2\omega_9^3 - 12c_s^2\omega_5^2\omega_9^2\omega_{12} - 306c_s^2 v_1^2\omega_5^3\omega_9\omega_{12}^2 - 36v_1^4\omega_5^3\omega_9^2 - 6c_s^4\omega_5^3\omega_9^2\omega_{12} - 3c_s^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 19v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 5c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 36v_1^4\omega_5^3\omega_9\omega_{12} + 36v_1^4\omega_5^2\omega_9^3\omega_{12} + 12c_s^2\omega_5^3\omega_9\omega_{12}^2 + 108c_s^2 v_1^2\omega_5^3\omega_9^3 + 72v_1^4\omega_5^3\omega_{12}^2)\frac{\rho}{12\omega_5^3\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = (18\omega_4^3c_s^2\omega_1^2\omega_9 + \omega_4^2c_s^4\omega_1^3\omega_9^2 - 90\omega_4\omega_1^3v_1^4\omega_9^2 - 306\omega_4c_s^2\omega_1^3v_1^2\omega_9^2 - 36\omega_4^2\omega_1^3v_1^4 + 6\omega_4^3c_s^4\omega_1^3\omega_9 - 6\omega_4^2c_s^2\omega_1^2\omega_9^2 - 72\omega_1^3v_1^2\omega_9^2 +$$
$$54\omega_4^3c_s^2\omega_1^2v_1^2\omega_9 + 39\omega_4^3\omega_1^3v_1^2\omega_9 + 36\omega_4^3\omega_1^2v_1^2 + 12\omega_4^2c_s^4\omega_1^2\omega_9 + 12c_s^4\omega_1^3\omega_9^2 + 6\omega_4^2c_s^2\omega_1^3\omega_9 + 13\omega_4^3c_s^4\omega_1^2\omega_9^2 - 19\omega_4^2\omega_1^3v_1^2\omega_9^2 + 36\omega_4^3\omega_1^2v_1^4\omega_9 +$$
$$60\omega_4^2c_s^2\omega_1^3v_1^2\omega_9^2 - 18\omega_4^3c_s^4\omega_1^2\omega_9 - \omega_4^2c_s^2\omega_1^3\omega_9^2 - 72\omega_4^2\omega_1^3v_1^2\omega_9 + 198\omega_4^2c_s^2\omega_1^3v_1^2\omega_9 - 6\omega_4^3\omega_1^2v_1^4\omega_9^2 - 3\omega_4^3c_s^2\omega_1^2v_1^2\omega_9^2 + 12\omega_4^3c_s^4\omega_9^2 - 4\omega_4^3\omega_1^3v_1^2\omega_9^2 -$$
$$6\omega_4^3c_s^2\omega_1^3\omega_9 + 6\omega_4^2c_s^4\omega_1^2\omega_9^2 - 12\omega_4^2c_s^2\omega_1^2\omega_9 - \omega_4^3c_s^4\omega_1^3\omega_9^2 + 252c_s^2\omega_1^3v_1^2\omega_9^2 - 12c_s^2\omega_1^3\omega_9^2 - 36\omega_4^3\omega_1^3v_1^2 - 6\omega_4^2c_s^4\omega_1^3\omega_9 - 5\omega_4^3c_s^2\omega_1^2\omega_9^2 -$$
$$108\omega_4c_s^2\omega_1^3v_1^2\omega_9 - 36\omega_4\omega_1^3v_1^4\omega_9 + 12\omega_4c_s^2\omega_1^2\omega_9^2 - 39\omega_4^3\omega_1^3v_1^4\omega_9 + 18\omega_4^2c_s^2\omega_1^2v_1^2\omega_9 + 6\omega_4^3c_s^2\omega_1\omega_9^2 + 19\omega_4^2\omega_1^3v_1^4\omega_9^2 - 99\omega_4^3c_s^2\omega_1^3v_1^2\omega_9 -$$
$$18\omega_4^3c_s^2\omega_1v_1^2\omega_9^2 - 12\omega_4c_s^4\omega_1^3\omega_9^2 - 36\omega_4^3\omega_1^2v_1^2\omega_9 + 36\omega_4^3\omega_1^3v_1^4 + 12\omega_4^3c_s^4\omega_1\omega_9 + 108\omega_4^3c_s^2\omega_1^3v_1^2 + 90\omega_4\omega_1^3v_1^2\omega_9^2 - 36\omega_4c_s^2\omega_1^2v_1^2\omega_9^2 + 72\omega_1^3v_1^4\omega_9^2 -$$
$$108\omega_4^2c_s^2\omega_1^3v_1^2 + 36\omega_4^2\omega_1^3v_1^2 - 12\omega_4c_s^4\omega_1^2\omega_9^2 - 24\omega_4^3c_s^4\omega_1\omega_9^2 + 12\omega_4c_s^2\omega_1^3\omega_9^2 + 36\omega_4\omega_1^3v_1^2\omega_9 - 12\omega_4^3c_s^2\omega_1\omega_9 + 12\omega_4^3c_s^2\omega_1^3v_1^2\omega_9^2 + 72\omega_4^2\omega_1^3v_1^4\omega_9 +$$
$$6\omega_4^3\omega_1^2v_1^2\omega_9^2 + 36\omega_4^3c_s^2\omega_1v_1^2\omega_9 - 108\omega_4^3c_s^2\omega_1^2v_1^2 + 36\omega_4^2c_s^2\omega_1^2v_1^2\omega_9 + 4\omega_4^3\omega_1^3v_1^4\omega_9^2 - 36\omega_4^3\omega_1^2v_1^4)\frac{\rho}{12\omega_4^3\omega_1^3\omega_9^2}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = (-12\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 40\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 + 72\omega_3^2\omega_4c_s^4\omega_1\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 492\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 -$$
$$16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 + 180\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 48\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 - 108\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^2 + 36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 2\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 + 18\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 12\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 -$$
$$24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 72\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 + 648\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 - 60\omega_3\omega_4^2\omega_1^2v_1^4\omega_2^2 + 432\omega_3^2\omega_4^2c_s^2v_1^2\omega_2^2 -$$
$$24\omega_3^2\omega_4^2\omega_1^3v_1^2 - 12\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 8\omega_3^2\omega_4^2c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 + 117\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^3 - 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 + 174\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 -$$
$$56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 - 144\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2 - 117\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4 - 432\omega_3^2\omega_4^2v_1^2v_2^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 36\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 +$$
$$216\omega_3\omega_4^2\omega_1^2v_1^4\omega_2^3 - 108\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 - 36\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 86\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 36\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 - 288\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 -$$
$$40\omega_3^2\omega_4^2c_s^2\omega_1^3 + 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 468\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 576\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^2 - 96\omega_3\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 36\omega_4^2\omega_1^3v_1^2\omega_2^2 -$$
$$144\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 36\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 - 108\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 + 162\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 + 16\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 204\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 72\omega_3^2\omega_4\omega_1v_1^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 +$$
$$20\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 - 18\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 24\omega_3\omega_4^2\omega_1v_1^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2 - 48\omega_3^2\omega_4^2v_1^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 + 48\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 +$$
$$162\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 + 40\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 54\omega_4^2\omega_1^3v_1^2\omega_2^3 - 108\omega_3^2\omega_1^3v_1^4\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^2 - 108\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 -$$
$$540\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 + 264\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2 + 86\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 -$$
$$72\omega_4^2\omega_1^2v_1^4\omega_2^3 + 24\omega_3\omega_4^2\omega_1^3v_1^2\omega_2 - 54\omega_3^2\omega_1^3v_1^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 - 117\omega_3\omega_4^2\omega_1^3v_1^4\omega_2^3 + 80\omega_3^2\omega_4^2c_s^4\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 144\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2 +$$
$$117\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 + 240\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 72\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 + 108\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 + 72\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 -$$
$$216\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^3 + 48\omega_3^2\omega_4^2v_2^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 + 288\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3 + 38\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 -$$
$$172\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 297\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 + 48\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 36\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 + 72\omega_3^2\omega_4c_s^2\omega_2^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 -$$
$$72\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 + 108\omega_3\omega_4^2\omega_1^3v_1^4\omega_2^2 + 16\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 180\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 - 36\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^2 + 16\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 96\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 +$$
$$24\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 60\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^2 - 108\omega_3\omega_4\omega_1^3v_1^2\omega_2^3 + 18\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 264\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 + 168\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 +$$
$$24\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 336\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^2 + 324\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 + 108\omega_3^2\omega_1^2v_1^2\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 + 54\omega_4^2\omega_1^3v_1^4\omega_2^3 - 492\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 -$$
$$216\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 + 288\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2^3 + 48\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 54\omega_3^2\omega_1^3v_1^4\omega_2^3 + 72\omega_4^2\omega_1^2v_1^2\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_1^4\omega_2 -$$
$$72\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 + 32\omega_3^2\omega_4^2c_s^4\omega_1^3 + 96\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2 - 36\omega_4^2\omega_1^3v_1^4\omega_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2\omega_2 - 108\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 -$$
$$852\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 + 12\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 + 72\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 - 297\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 32\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 -$$
$$288\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2^2 - 324\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 24\omega_3\omega_4^2\omega_1v_1^4\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2 - 18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 + 192\omega_3^2\omega_4^2v_1^4\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^2}$$

coefficient $C^{(1)}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho} = (24 - 24v_1^2 + \omega^3v_1^2 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 5c_s^2\omega^3 - 14\omega^2v_1^2 - 46c_s^2\omega^2 - 36\omega + 36\omega v_1^2 - 72c_s^2)\frac{c_s^2v_1}{12\omega^3}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho} = (-72c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12} - 36c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2 -$$
$$6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^2\omega_5^2v_2^2\omega_9^3\omega_{12}^2 + c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 12v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 36c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12}^2 +$$
$$36c_s^2\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12} + 12\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12} - 6\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 6v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 36c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} +$$
$$30c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 36c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3 + 12\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3 + 108c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 48c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} +$$
$$6\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 12v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3 - 96c_s^4\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 18c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$$
$$12\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12} + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 6\omega_5^3v_2^2\omega_{21}\omega_9^2\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^3\omega_{12}^2 + 36c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 - 2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$$
$$36c_s^2\omega_5^2v_2^2\omega_{21}\omega_9^2\omega_{12}^2 - 72c_s^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 24v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 54c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} +$$
$$12v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12} + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 6v_1^2\omega_5^3v_2^2\omega_{21}\omega_9^2\omega_{12}^2 + 5c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 6c_s^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 -$$
$$12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 - 6c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 18c_s^2\omega_5^3v_2^2\omega_9^3\omega_{12}^2 + 72c_s^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 36c_s^2\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12}^2 - 24\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} -$$
$$6\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 12v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 36c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 -$$
$$12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 36c_s^4\omega_5^2\omega_9^3\omega_{12}^2 - c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 6v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12}^2 - 42c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6v_1^2\omega_5^3v_2^2\omega_9^3\omega_{12}^2 - 12c_s^2v_1^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 -$$
$$36\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} + 6\omega_5^3v_2^2\omega_9^3\omega_{12}^2 - 12c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 24v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 88c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 -$$
$$36c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - 12v_1^2\omega_5^2v_2^2\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 18c_s^2\omega_5^3v_2^2\omega_{21}\omega_9^2\omega_{12}^2 - 36c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 +$$
$$18c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12} + 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 6c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5^2v_2^2\omega_{21}\omega_9^2\omega_{12}^2 -$$
$$36c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12v_1^2\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12}^2 - 36c_s^4\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} -$$
$$12v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 24\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} +$$
$$12\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 18c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 18c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} +$$
$$180c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 18c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12} + 6c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12}^2 + 72c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} +$$
$$12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 24v_1^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} -$$
$$12v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2 - 18c_s^4\omega_5^3\omega_9^3\omega_{12}^2 + 18c_s^4\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 36c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12} + 12v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12}^2 +$$
$$12v_1^2\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12} - 18c_s^2\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12}^2 - 18c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 +$$
$$24\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 18c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5^2v_2^2\omega_9^3\omega_{12}^2 - 18c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 84c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$$
$$12c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 36c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12c_s^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 12v_1^2\omega_5^2v_2^2\omega_9^3\omega_{12}^2 + 24v_1^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$$

$6c_s^2v_1^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 12\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3 - 6c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 12v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 -$
$18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 18\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 42c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 36c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3)\frac{v_1}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (12\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 6v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 36c_s^2\omega_5\omega_{15}\omega_9^3\omega_{12}^2 + 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 6\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} +$
$18v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 6v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 6v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 18v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} +$
$6\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 36c_s^2\omega_5\omega_{21}\omega_9^2\omega_{12}^2 - 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} +$
$36c_s^2\omega_5\omega_9^3\omega_{12}^2 - 2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5\omega_9^3\omega_{12}^2 + 18v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 6v_1^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 -$
$12v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 6\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36c_s^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 -$
$36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_5\omega_{21}\omega_{15}\omega_9^3 + 36c_s^2\omega_5\omega_{15}\omega_9^3\omega_{12} - 6\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - 36c_s^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - \omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3 +$
$6v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 6\omega_5^2\omega_9^3\omega_{12}^2 + 54c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12v_1^2\omega_5\omega_{15}\omega_9^3\omega_{12} - 40c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12v_1^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 18c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 -$
$12\omega_5\omega_{15}\omega_9^3\omega_{12} - 36c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3 + 12\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 5c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 36c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_{21}\omega_{15}\omega_9^3\omega_{12} +$
$18c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12v_1^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 18c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 +$
$54c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12v_1^2\omega_5\omega_9^3\omega_{12}^2 - 12v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 12v_1^2\omega_5\omega_{21}\omega_9^2\omega_{12}^2 + 12v_1^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 +$
$12v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 12v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 54c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} -$
$12v_1^2\omega_5\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 12\omega_5\omega_{15}\omega_9^3\omega_{12}^2 - 36c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 18c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 6c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2)\frac{c_s^2v_1}{12\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-18\omega_4^3c_s^2\omega_1^2\omega_9 - 18\omega_4\omega_1^2v_1^2\omega_9^2 + 12\omega_4^2c_s^2\omega_1^2\omega_9^2 - 4\omega_4^2\omega_1^2\omega_9^2 - 12\omega_4^3\omega_1v_1^2\omega_9^2 + 12\omega_4^3\omega_1^2v_1^2 + 36c_s^2\omega_1^2\omega_9^2 - 18\omega_4^3\omega_1\omega_9 +$
$12\omega_4^2\omega_1v_1^2\omega_9 - 12\omega_4^2v_1^2\omega_9^2 - 36\omega_4^2c_s^2\omega_9^2 + 6\omega_4^2\omega_1v_1^2\omega_9^2 + 12\omega_4^3\omega_1\omega_9^2 - 36\omega_4^2c_s^2\omega_1^2 + 18\omega_4^3\omega_1v_1^2\omega_9 + 18\omega_4^2c_s^2\omega_1^2\omega_9 - 6\omega_4^2\omega_1^2\omega_9 + 5\omega_4^3c_s^2\omega_1^2\omega_9^2 +$
$4\omega_4^2\omega_1^2v_1^2\omega_9^2 - 54\omega_4c_s^2\omega_1^2\omega_9^2 - 36\omega_4^3c_s^2\omega_9 - 12\omega_4^3\omega_1^2 + 12\omega_4^3v_1^2\omega_9^2 - 12\omega_1^2\omega_9^2 - 12\omega_4^2\omega_1\omega_9 + 36\omega_4^2c_s^2\omega_1\omega_9 - 40\omega_4^3c_s^2\omega_1\omega_9^2 - 36\omega_4^3c_s^2\omega_1 -$
$12\omega_4^3\omega_9^2 - 12\omega_4^2\omega_1^2v_1^2 - 6\omega_4^3\omega_1^2v_1^2\omega_9 - \omega_4^3\omega_1^2\omega_9^2 + 12\omega_1^2v_1^2\omega_9^2 + 12\omega_4^2\omega_9^2 - 12\omega_4^3\omega_1v_1^2 + 18\omega_4\omega_1^2\omega_9^2 + 12\omega_4^2\omega_1^2 + 6\omega_4^3\omega_1^2\omega_9 + 54\omega_4^3c_s^2\omega_1\omega_9 +$
$36\omega_4^3c_s^2\omega_1^2 + 12\omega_4^3\omega_9 + \omega_4^3\omega_1^2v_1^2\omega_9^2 + 6\omega_4^2\omega_1^2v_1^2\omega_9 + 36\omega_4^3c_s^2\omega_9^2 - 6\omega_4^2\omega_1\omega_9^2 - 12\omega_4^3v_1^2\omega_9 + 12\omega_4^3\omega_1 + 18\omega_4^2c_s^2\omega_1\omega_9^2)\frac{c_s^2v_1}{12\omega_4^3\omega_1^2\omega_9^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-72\omega_4^2c_s^4\omega_1^2\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 - 324\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 16\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 4\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 +$
$35\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 16\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 + 36\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 + 16\omega_3^2\omega_4^2c_s^2v_1^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1^3v_2^2 - 18\omega_4^2c_s^2\omega_1^3\omega_2^3 +$
$324\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 20\omega_3^2\omega_4^2c_s^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 15\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 32\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 - 32\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2 +$
$36\omega_3^2\omega_4^2v_1^2v_2^2\omega_2^3 + 36\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 + 12\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 12\omega_4^2c_s^2\omega_1^3\omega_2^2 - 60\omega_3^2\omega_4^2v_2^4\omega_2^3 + 74\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 49\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 52\omega_3^2\omega_4^2c_s^2\omega_1^3 -$
$24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 36\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 30\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^3 + 24\omega_4^2c_s^2\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 25\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 108\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 -$
$12\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 + 18\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 - 12\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 4\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 +$
$27\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 + 54\omega_4^2c_s^4\omega_1^3\omega_2^3 - 4\omega_3^2\omega_4^2v_1^2\omega_2^3 + 216\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 18\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 + 96\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 3\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 +$
$4\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 27\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^2 + 32\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2 + 138\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 4\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2 -$
$119\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 - 102\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 4\omega_3^2\omega_4^2\omega_2^3 + 66\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 12\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 12\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 -$
$28\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 + 3\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 + 24\omega_3^2\omega_4^2v_2^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 78\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 42\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 9\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 -$
$4\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 - 84\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 72\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 - 27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 16\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 + 8\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 - 28\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^2 -$
$27\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_2^4 - 20\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 - 24\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 216\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 - 58\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3 +$
$72\omega_3^2\omega_4^2c_s^4\omega_1^3 - 36\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 + 28\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 30\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2\omega_2 + 4\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 - 138\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 9\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 -$
$27\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 28\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 60\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2^2 - 36\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 4\omega_3^2\omega_4^2\omega_1^3v_1^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3)\frac{v_1}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = (-24 + 72v_1^2 - 18c_s^2\omega - 12\omega^2 - c_s^2\omega^3 + 36\omega^2v_1^2 + 8c_s^2\omega^2 + 36\omega - 108\omega v_1^2 + 12c_s^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = (-24c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 36v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12} - 12c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2 - 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$
$12c_s^2\omega_5^2v_2^2\omega_9^3\omega_{12}^2 - 36v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12}^2 + 12c_s^2\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12} - 48c_s^2v_1^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12} -$
$6\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} +$
$12c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3 + 12\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3 + 36c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 6\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 +$
$24c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 36v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3 - 12c_s^4\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 144c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12} -$
$6\omega_5^3v_2^2\omega_{21}\omega_9^2\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^3\omega_{12}^2 - 18c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12c_s^2\omega_5^2v_2^2\omega_{21}\omega_9^2\omega_{12}^2 - 24c_s^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} +$
$72v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 18c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12} + 18v_1^2\omega_5^3v_2^2\omega_{21}\omega_9^2\omega_{12}^2 - c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 -$
$24c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 18c_s^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 78c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 6c_s^2\omega_5^3v_2^2\omega_9^3\omega_{12}^2 + 24c_s^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12}^2 -$
$24\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12}^2 + 36v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 108c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$24c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12c_s^4\omega_5^2\omega_9^3\omega_{12}^2 + 18v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12}^2 - 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 18v_1^2\omega_5^3v_2^2\omega_9^3\omega_{12}^2 - 36c_s^2v_1^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 -$
$36\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6\omega_5^3v_2^2\omega_9^3\omega_{12}^2 + 60c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 72v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$4c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - 36v_1^2\omega_5^2v_2^2\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 6c_s^2\omega_5^3v_2^2\omega_{21}\omega_9^2\omega_{12}^2 - 12c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12} +$

$180c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12} + 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - 18c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5^2v_2^2\omega_{21}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} -$
$36v_1^2\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12}^2 - 12c_s^4\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 84c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 108v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} -$
$36v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36c_s^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 24\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 18c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 36c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} +$
$12\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 6c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 6c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 132c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 18c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 +$
$6c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12} + 18c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12}^2 + 24c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$72v_1^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 42c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 36v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2 -$
$6c_s^4\omega_5^3\omega_9^3\omega_{12}^2 + 6c_s^4\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^3\omega_{12} + 36v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12}^2 + 36v_1^2\omega_5^2v_2^2\omega_{15}\omega_9^3\omega_{12} +$
$24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 24c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 54v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 72c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} +$
$12\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36c_s^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 12\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2 + 60c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 36v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3 +$
$24\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 6c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 12\omega_5^2v_2^2\omega_9^3\omega_{12}^2 - 6c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$36c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36c_s^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 36v_1^2\omega_5^2v_2^2\omega_9^3\omega_{12}^2 + 72v_1^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$
$18c_s^2v_1^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 12\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^3 - 6c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 36v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 84c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 -$
$24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 18\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 24c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^3)\frac{\rho}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (-12c_s^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36v_1^2\omega_5^3\omega_{15}\omega_9 + 6\omega_5^3\omega_9^2\omega_{12} - 12c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12} + 36v_1^2\omega_5^2\omega_9^2\omega_{12} + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 -$
$12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9 + 12c_s^2\omega_5^2\omega_{15}\omega_9^2 - 6\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 6c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 18v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12\omega_5^2\omega_{15}\omega_9^2 +$
$6c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12} - 36v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} - c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2 + 12\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9 -$
$12\omega_5\omega_{21}\omega_{15}\omega_9^2 + 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 6c_s^2\omega_5^3\omega_9^2\omega_{12} - 18v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 36v_1^2\omega_5^3\omega_{15}\omega_9^2 - 12\omega_5^3\omega_{15}\omega_9 -$
$12c_s^2\omega_5^3\omega_{15}\omega_9^2 - 4c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 36v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 18v_1^2\omega_5^3\omega_9^2\omega_{12} + 36v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 36v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} -$
$6\omega_5^3\omega_{21}\omega_9\omega_{12} - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 72v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 18v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12} - 12\omega_5^2\omega_9^2\omega_{12} - 12c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} -$
$6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9 - 24\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 18c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 36v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12} +$
$36v_1^2\omega_5^2\omega_{15}\omega_9^2 + 24\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_5^2\omega_{21}\omega_9\omega_{12} - 72v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 18v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 6\omega_5^3\omega_{15}\omega_9\omega_{12} -$
$36v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 18v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12c_s^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_5^3\omega_{21}\omega_{15}\omega_9 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 12\omega_5^3\omega_{15}\omega_9^2 + 12c_s^2\omega_5^3\omega_{15}\omega_9)\frac{c_s^2\rho}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (-72\omega_4\omega_1^3v_1^2 - 12\omega_4c_s^2\omega_1\omega_9 + 24\omega_4\omega_1^3 + 12\omega_4^2c_s^2\omega_1 - 12\omega_4^2c_s^2\omega_9 - \omega_4^2c_s^2\omega_1^3\omega_9 - 24\omega_4\omega_1^2 - 12c_s^2\omega_1^2\omega_9 + 12\omega_4\omega_1\omega_9 +$
$72\omega_4\omega_1^2v_1^2 - 24\omega_4^2c_s^2\omega_1^2 + 36\omega_1^3v_1^2 - 4\omega_4^2c_s^2\omega_1^2\omega_9 + 36\omega_4\omega_1^2v_1^2\omega_9 + 36\omega_4^2\omega_1v_1^2 + 12\omega_4^2c_s^2\omega_1^3 + 18\omega_4^2c_s^2\omega_1\omega_9 - 72\omega_4^2\omega_1^2v_1^2 + 24\omega_4c_s^2\omega_1^2 - 12\omega_4^2\omega_1 -$
$12\omega_4\omega_1^2\omega_9 - 36\omega_4\omega_1v_1^2\omega_9 - 24\omega_4c_s^2\omega_1^3 - 12\omega_1^3 + 36\omega_4^2\omega_1^3v_1^2 + 24\omega_4^2\omega_1^2 - 36\omega_1^2v_1^2\omega_9 + 12c_s^2\omega_1^3 + 12\omega_4c_s^2\omega_1^2\omega_9 + 12\omega_1^2\omega_9 - 12\omega_4^2\omega_1^3)\frac{c_s^2\rho}{12\omega_4^2\omega_1^3\omega_9}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (54\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 + 18\omega_3\omega_1^3v_2^2\omega_2^2 + 24\omega_3^2\omega_4\omega_1^3v_2^4 + 18\omega_3^2\omega_1^2v_2^2\omega_2^3 + 76\omega_3^2\omega_4c_s^4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 + \omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 +$
$12\omega_3^2\omega_4\omega_1^2v_2^4\omega_2 - 6\omega_3\omega_4\omega_1v_2^2\omega_2^3 + 150\omega_3^2\omega_4c_s^2\omega_1v_2^2\omega_2^3 - 24\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1v_2^2\omega_2^2 - 6\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 + 18\omega_4\omega_1^3v_2^2\omega_2^2 +$
$66\omega_3^2\omega_4\omega_1^3v_2^2\omega_2 - 54\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 + 90\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 12\omega_3^2\omega_4c_s^2\omega_1^3v_1^2 - 28\omega_3^2\omega_4c_s^4\omega_1\omega_2^2 + 54\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 18\omega_3^2\omega_1^2v_2^2\omega_2^2 + 18\omega_4\omega_1^2v_2^4\omega_2^3 +$
$16\omega_3^2\omega_4c_s^4\omega_1^3 + 12\omega_3\omega_4\omega_1^3v_2^2\omega_2 - 54\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 216\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 + 8\omega_3\omega_4c_s^4\omega_1\omega_2^3 - 174\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2 - 12\omega_3^2\omega_4\omega_1^3v_1^2 + 18\omega_3\omega_1^2v_2^4\omega_2^3 +$
$66\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 - 24\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 + 18\omega_3^2\omega_1^3v_2^4\omega_2^2 + \omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 - 12\omega_3^2\omega_4c_s^2\omega_1v_2^2\omega_2^2 - 18\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 30\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 +$
$6\omega_3\omega_4\omega_1^2v_2^4\omega_2^2 - 48\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 - 108\omega_3^2\omega_4c_s^2v_2^2\omega_2^3 - 68\omega_3^2\omega_4c_s^4\omega_2^3 - 36\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 -$
$4\omega_3^2\omega_4\omega_1\omega_2^3 - 9\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^3 + 12\omega_3^2\omega_4v_2^2\omega_2^3 - 144\omega_3^2\omega_4\omega_1v_1^2v_2^2\omega_2^2 - 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 132\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 + 12\omega_3^2\omega_4\omega_1^2v_1^2\omega_2 -$
$36\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 4\omega_3^2\omega_4\omega_2^3 + 18\omega_3^2\omega_1v_2^4\omega_2^3 - 9\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 + 32\omega_3^2\omega_4c_s^2\omega_1\omega_2^2 - 126\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3\omega_4c_s^2\omega_1\omega_2^3 - 90\omega_3^2\omega_4\omega_1v_1^2v_2^2\omega_2^3 -$
$18\omega_3\omega_4c_s^2\omega_1v_2^2\omega_2^3 - 18\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^2 - 4\omega_3^2\omega_4\omega_1\omega_2^2 - 12\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2 - 96\omega_3^2\omega_4c_s^2v_1^2\omega_2^3 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2 + 18\omega_3\omega_4c_s^4\omega_1^3\omega_2^3 - 18\omega_4\omega_1^2v_2^2\omega_2^3 -$
$20\omega_3^2\omega_4c_s^2\omega_1^3 - 18\omega_3^2\omega_1^2v_2^4\omega_2^2 - 12\omega_3\omega_4\omega_1^3v_2^4\omega_2 + 6\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 - 12\omega_3^2\omega_4v_1^2\omega_2^3 - 8\omega_3\omega_4c_s^2\omega_1^3\omega_2 + 2\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 + 54\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 +$
$36\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 + 24\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2 - 18\omega_3^2\omega_1^3v_2^2\omega_2^2 - 54\omega_3c_s^2\omega_1^3v_2^2\omega_2^2 - 18\omega_3^2\omega_1^2v_2^2\omega_2^3 + 54\omega_3^2\omega_4\omega_1v_2^4\omega_2^3 - \omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 +$
$18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2 - 18\omega_3^2\omega_1^2v_2^4\omega_2^3 - 18\omega_3\omega_1^3v_2^4\omega_2^2 - 36\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 - \omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 + 2\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^2 + 6\omega_3\omega_4\omega_1v_2^4\omega_2^3 +$
$72\omega_3^2\omega_4\omega_1^3v_1^2v_2^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 - 18\omega_4\omega_1^3v_2^4\omega_2^2 - 36\omega_3^2\omega_4\omega_1^2v_1^2v_2^2\omega_2 + 12\omega_3^2\omega_4\omega_1v_2^4\omega_2^2 + 108\omega_3^2\omega_4v_1^2v_2^2\omega_2^3 - 54\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 -$
$56\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 90\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 - 3\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 + 60\omega_3\omega_4c_s^2\omega_1v_1^2\omega_2^3 - 28\omega_3^2\omega_4c_s^4\omega_1^2\omega_2 - 36\omega_3^2\omega_4\omega_1^3v_2^4\omega_2 + 180\omega_3^2\omega_4\omega_1^2v_1^2v_2^2\omega_2^2 +$
$54\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 + 132\omega_3^2\omega_4c_s^2\omega_1^3v_2^2 + 36\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 - 18\omega_3\omega_4c_s^2\omega_1^3\omega_2^3 + 9\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^2 + 28\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^2 - 18\omega_3^2\omega_1v_2^2\omega_2^3 -$
$36\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 - 48\omega_3^2\omega_4\omega_1^3v_2^2 - 2\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2 + 12\omega_3^2\omega_4\omega_1^3v_1^2\omega_2 + 8\omega_3\omega_4c_s^4\omega_1^3\omega_2 - 42\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 48\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_2^3 -$
$90\omega_3^2\omega_4\omega_1^3v_1^2v_2^2\omega_2 - 30\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 12\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 - 14\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 36\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 - 14\omega_3^2\omega_4c_s^4\omega_1^3\omega_2 - 6\omega_3\omega_4\omega_1^2v_2^2\omega_2^2 -$
$90\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 + 28\omega_3^2\omega_4c_s^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1^2\omega_2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 + 12\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 + 24\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 - 84\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_2^2 + 9\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 -$
$48\omega_3^2\omega_4v_2^4\omega_2^3 - 216\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 32\omega_3^2\omega_4c_s^2\omega_1^2\omega_2 - 6\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2 + 36\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 54\omega_3^2c_s^2\omega_1v_2^2\omega_2^3 + 56\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (-5\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} + 2\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 4\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3 +$
$2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 9\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} + 4\omega_{10}v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 2\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 3\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 -$

$4\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 6\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} - 4\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^3\omega_{12} + 2\omega_{10}\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 7\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 4\omega_{10}c_s^2\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2 +$
$8\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3 + 4\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 - 3\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 4\omega_{10}\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 4\omega_{10}c_s^2\omega_5^2\omega_{15}^2\omega_9^3\omega_{12} -$
$2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3 + 13\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 2\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 - \omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 4c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 +$
$12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 2\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2 - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 - 4\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3 - 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - \omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 +$
$2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 - 24\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 4\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 2\omega_{10}v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + \omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 3\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} +$
$4\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 8\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3 - 16\omega_{10}c_s^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 + 3\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$2\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 4\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9^3\omega_{12}^2 + 4\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2 + 26\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12} - 2\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 +$
$4\omega_{10}v_1^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} + 7\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 6\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} + 4c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 8\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 + 4\omega_{10}v_1^2\omega_5^2\omega_{15}^2\omega_9^3\omega_{12} -$
$2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 9\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} - 2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 +$
$2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 5\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}v_1^2\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2 - 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 15\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} -$
$6\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - \omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 3\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} - 4\omega_{10}v_1^2\omega_5^3\omega_{15}^2\omega_9^3\omega_{12} - 4\omega_{10}v_1^2\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2 +$
$11\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} + 2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + \omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 - 6\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12} -$
$2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2 + \omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 2\omega_{10}v_1^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 2\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9^3\omega_{12}^2 - 4\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2 +$
$8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3 + 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - \omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 4\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - 4\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12})\frac{\rho v_1 v_2}{2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (50\omega_3\omega_1^3v_2^2\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 - 12\omega_3\omega_1^2v_1^2\omega_2 - 6\omega_1^3v_1^2\omega_2 + 12\omega_3v_1^2\omega_2^3 + 12\omega_3\omega_1^2\omega_2^2 + 108\omega_3c_s^2\omega_1\omega_2^3 + 6\omega_1\omega_2^3 -$
$6\omega_1v_1^2\omega_2^3 + 84\omega_3c_s^2\omega_1^3 + 36c_s^2\omega_1^2\omega_2^2 + 141\omega_3\omega_1v_2^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 - 66\omega_3c_s^2\omega_2^3 + 48\omega_3\omega_1^3v_2^2 - 18c_s^2\omega_1^3\omega_2 - 23\omega_3\omega_1^3\omega_2^2 - 75\omega_3\omega_1^3v_2^2\omega_2 + 60\omega_3\omega_1v_2^2\omega_2^2 +$
$18\omega_3\omega_1^2v_1^2\omega_2^2 + 12\omega_3\omega_1^3v_1^2 - 18c_s^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 - 50\omega_3\omega_1^2v_2^2\omega_2^3 - 9\omega_3\omega_1v_1^2\omega_2^3 - 12\omega_3\omega_1v_1^2\omega_2^2 - 66\omega_3\omega_1^2v_2^2\omega_2^2 - 9\omega_3\omega_1^3v_1^2\omega_2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 +$
$42\omega_3\omega_2^3 + 6\omega_3\omega_1^2v_2^2\omega_2 - 42\omega_3c_s^2\omega_1^2\omega_2^3 - 12\omega_3\omega_1\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 + 12\omega_1^2v_1^2\omega_2^2 - 36\omega_3\omega_1^3 - 60\omega_3\omega_1\omega_2^3 - 114\omega_3v_2^2\omega_2^3 - 12\omega_1^2\omega_2^2)\frac{\rho v_1 v_2}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (24 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 3c_s^2\omega^3 + 36\omega v_2^2 - 42c_s^2\omega^2 - 36\omega - 14\omega^2v_2^2 - 72c_s^2 - 24v_2^2 + \omega^3v_2^2)\frac{c_s^2v_2}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (6\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12} - 18\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 144\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}^2\omega_9 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} +$
$12\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}^2 - 36\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12} + 48\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 18c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9 - 18\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} -$
$12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2 - 6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_9\omega_{12} + 36\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12} - 24\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$
$6\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} + 36\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9 - 3\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 18\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_9\omega_{12} + 24\omega_{10}v_1^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$36\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 6\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 18\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2\omega_9 +$
$12\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_9\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 96\omega_{10}^2c_s^4\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 72\omega_{10}^2c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 -$
$36\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 54\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36\omega_{10}^2c_s^4\omega_5^2\omega_{15}\omega_9\omega_{12} + 18\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 42\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$36\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12} - 12\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2 - 12\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9 +$
$6\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9 + 24\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 3\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 108\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9 - 12\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12} +$
$12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15}^2\omega_9 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 72\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15}^2\omega_9\omega_{12} +$
$72\omega_{10}c_s^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 6v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 9\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$36\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 72\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 24\omega_{10}^2v_1^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 5\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$6\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} + 15\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 18\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12} - \omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$6\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} - 18\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12} - 12\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 27\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$6\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 60\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9 - 36\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9 -$
$12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 15\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9 +$
$18\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 15\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 24\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 36\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 24\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$
$12\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}c_s^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 15\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9 + 36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 36\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2 - 36\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 36\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 48\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$12\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2 - 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12} - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 -$
$6\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} + 3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{10}^2v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} +$
$12\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{15}^2\omega_9 + 18\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 156\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$6v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{15}^2\omega_9 + 18\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12} + 18\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} +$
$6\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12} - 6\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} - 36\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 36c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$
$45\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}^2\omega_9 - 12\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_9\omega_{12} + 6\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} +$

$12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + \omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9 + 36\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}^2 + 18\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2 - 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} + 9\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2c_s^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2)\frac{v_2}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D_xD_y^3}\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D_xD_y^3}\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D_xD_y^3}\rho} = (-12\omega_{10}\omega_5\omega_{15}^2\omega_9 - \omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_5v_2^2\omega_{15}^2\omega_9 - 6\omega_{10}\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{10}\omega_5^2v_2^2\omega_{15}^2 + 12\omega_{10}\omega_5v_2^2\omega_{15}\omega_9\omega_{12} + 36\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 36c_s^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 18\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12} + \omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 6\omega_{10}\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12} - 18\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36\omega_{10}c_s^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 36\omega_{10}c_s^2\omega_5\omega_{15}^2\omega_9 - 12\omega_{10}\omega_5v_2^2\omega_{21}\omega_9\omega_{12} - 36\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}\omega_5\omega_{21}\omega_9\omega_{12} - 36\omega_{10}c_s^2\omega_5\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_9\omega_{12} + 3\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 5\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}\omega_5^2v_2^2\omega_{15}^2\omega_9 - 12\omega_{10}\omega_5^2\omega_{15}^2 - 36\omega_{10}c_s^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 18\omega_{10}c_s^2\omega_5^2\omega_{15}^2\omega_{12} + 6\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} + 18\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 18\omega_{10}\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 54c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 54\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9 - 12v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}c_s^2\omega_5^2\omega_{15}^2\omega_9 - 6\omega_{10}\omega_5^2v_2^2\omega_{15}^2\omega_{12} - 15c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 9\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9 + 18c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}c_s^2\omega_5\omega_{15}\omega_9\omega_{12} - 12\omega_5^2v_2^2\omega_{21}\omega_{15}^2 - 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2 + 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_5\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{10}\omega_5^2\omega_{15}^2\omega_9 + 12\omega_5^2\omega_{21}\omega_{15}^2 + 6\omega_{10}\omega_5^2\omega_{15}^2\omega_{12} + 6\omega_{10}\omega_5^2v_2^2\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}\omega_5\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}c_s^2\omega_5\omega_{21}\omega_9\omega_{12} + 3\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}\omega_5v_2^2\omega_{15}^2\omega_9\omega_{12} - 18\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 5\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 3\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12} + 18\omega_{10}c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12})\frac{c_s^2v_2}{12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D_xD_y^3}\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D_xD_y^3}\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D_xD_y^3}\rho} = (36\omega_7c_s^2\omega_1 - 12\omega_7^2\omega_1\omega_5v_2^2 - \omega_7^2\omega_1^2\omega_5 - 36\omega_7^2c_s^2 - 18\omega_7\omega_1\omega_5 - \omega_7^2\omega_1^2 + 12\omega_7\omega_5 - 36c_s^2\omega_1\omega_5 + 6\omega_1^2\omega_5v_2^2 + 3\omega_7^2c_s^2\omega_1^2\omega_5 + 54\omega_7c_s^2\omega_1\omega_5 + 12\omega_7^2\omega_5v_2^2 - 12\omega_7^2v_2^2 - 3\omega_7\omega_1^2\omega_5v_2^2 + 36\omega_7^2c_s^2\omega_5 - 6\omega_7^2\omega_1 - 6\omega_7\omega_1^2v_2^2 + 6\omega_7^2\omega_1v_2^2 - 6\omega_1^2\omega_5 - 18\omega_7c_s^2\omega_1^2 - 12\omega_7\omega_5v_2^2 + \omega_7^2\omega_1^2v_2^2 + 12\omega_1\omega_5 - 36\omega_7c_s^2\omega_5 + 18\omega_7\omega_1\omega_5v_2^2 - 9\omega_7c_s^2\omega_1^2\omega_5 - 12\omega_7\omega_1 + 12\omega_7\omega_1v_2^2 + 3\omega_7^2c_s^2\omega_1^2 + 6\omega_7\omega_1^2 + 3\omega_7\omega_1^2\omega_5 + 18c_s^2\omega_1^2\omega_5 + \omega_7^2\omega_1^2\omega_5v_2^2 + 18\omega_7^2c_s^2\omega_1 - 12\omega_7^2\omega_5 + 12\omega_7^2 - 36\omega_7^2c_s^2\omega_1\omega_5 + 12\omega_7^2\omega_1\omega_5 - 12\omega_1\omega_5v_2^2)\frac{c_s^2v_2}{12\omega_7^2\omega_1^2\omega_5}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D_xD_y^3}\rho} = (-108\omega_4^2c_s^4\omega_1^2\omega_2^3 + 228\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 - 712\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 - 6\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 - 56\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 + 52\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 36\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 56\omega_3^2\omega_4^2\omega_1^3v_2^2 - 36\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 18\omega_4^2c_s^2\omega_1^3\omega_2^3 + 1232\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 208\omega_3^2\omega_4^2c_s^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 132\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 - 18\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 + 72\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 - 24\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 - 136\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 36\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 144\omega_3^2\omega_4^2v_2^4\omega_2^3 + 208\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 184\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 108\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 - 9\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 - 104\omega_3^2\omega_4^2c_s^2\omega_1^3 + 104\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 36\omega_4^2c_s^2\omega_1^2\omega_2^3 - 56\omega_3\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 - 118\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 216\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 48\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 78\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 + 54\omega_4^2c_s^4\omega_1^3\omega_2^3 + 320\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 + 16\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 - 88\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 120\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3 - 9\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 + 92\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 394\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 - 342\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 276\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 - 16\omega_3^2\omega_4^2\omega_2^3 - 288\omega_3^2\omega_4^2c_s^4\omega_2^3 + 152\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 18\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 + 32\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 120\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 + 160\omega_3^2\omega_4^2v_2^2\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 + 588\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 256\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 40\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 18\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 - 168\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 144\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 + 448\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 18\omega_3^2\omega_4^2c_s^3\omega_1^2v_2^2 - 412\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 78\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4 - 784\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 - 368\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 36\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3 - 96\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 + 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 460\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 92\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 56\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3)\frac{v_2}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D_xD_y^3}v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D_xD_y^3}v_1} = (2 + 3c_s^2\omega + \omega v_2^2 - \omega - 6c_s^2 - 2v_2^2)\frac{\rho v_1v_2}{12\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D_xD_y^3}v_1} = (156\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5^3v_2^2\omega_{15}^2\omega_9\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 4\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 36\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18\omega_{10}^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^2v_2^2\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 66\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 66\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - \omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 6\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 132\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2\omega_5^3v_2^2\omega_{21}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 24\omega_{10}^2\omega_5^2v_2^2\omega_{15}^2\omega_9^2\omega_{12} - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2\omega_5^3v_2^2\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 72\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 84\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 18\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^3v_2^2\omega_{15}^2\omega_9^2\omega_{12} - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} + 60\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 48\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 + 66\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 48\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 96\omega_{10}^2c_s^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 - 36\omega_{10}^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + \omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 + 84\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 6\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 72\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 + 3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2\omega_5^2v_2^2\omega_{15}\omega_9^2\omega_{12}^2 +$

$6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$42\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}^2\omega_5^3v_2^2\omega_{15}^2\omega_9^2\omega_{12}^2 + 90\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2)\frac{\rho v_1v_2}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D_xD_y^3}v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D_xD_y^3}v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D_xD_y^3}v_1} = (v_2^2\omega_{15} + \omega_{10}v_2^2\omega_{15} + 3\omega_{10} + 3c_s^2\omega_{15} + 3\omega_{10}c_s^2\omega_{15} - 9\omega_{10}c_s^2 - \omega_{10}\omega_{15} - 3\omega_{10}v_2^2 - \omega_{15})\frac{\rho v_1v_2}{12\omega_{10}\omega_{15}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D_xD_y^3}v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D_xD_y^3}v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D_xD_y^3}v_1} = (-\omega_7\omega_5 - 9c_s^2\omega_5 - 3\omega_5v_2^2 - \omega_7 + \omega_7\omega_5v_2^2 + 3\omega_7c_s^2\omega_5 + \omega_7v_2^2 + 3\omega_5 + 3\omega_7c_s^2)\frac{\rho v_1v_2}{12\omega_7\omega_5}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D_xD_y^3}v_1} = (-9\omega_3\omega_1v_2^2\omega_2 + 18\omega_3\omega_4\omega_1v_1^2 - 9\omega_4\omega_1v_2^2\omega_2 + 6\omega_3\omega_4c_s^2\omega_2 + 18\omega_3\omega_4c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4c_s^2\omega_1 + 6\omega_3\omega_4\omega_1v_2^2\omega_2 -$
$18\omega_3\omega_4v_1^2\omega_2 - 27\omega_4c_s^2\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 4\omega_3\omega_4v_2^2\omega_2 + 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 2\omega_3\omega_4\omega_1v_2^2)\frac{\rho v_1v_2}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D_xD_y^3}v_2}$ at $\frac{\partial^4 v_2}{\partial x_1\partial x_2^3}$:

$C^{(1),\mathrm{SRT}}_{\mathrm{D_xD_y^3}v_2} = (-12 - 6\omega^2 - c_s^2\omega^3 - 54\omega v_2^2 + 2c_s^2\omega^2 + 18\omega + 18\omega^2v_2^2 + 36v_2^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D_xD_y^3}v_2} = (-12\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12} - 6\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 48\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}^2\omega_9 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} +$
$36\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}^2 - 12\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12} + 144\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 6c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9 -$
$6\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2 - 6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_9\omega_{12} + 12\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 24\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$
$18\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} + 12\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9 + 30\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 6\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_9\omega_{12} + 72\omega_{10}v_1^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$12\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 18\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 60\omega_{10}^2c_s^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2\omega_9 +$
$6\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_{10}^2c_s^4\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}^2c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 -$
$12\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 18\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2c_s^4\omega_5^2\omega_{15}\omega_9\omega_{12} + 6\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 48\omega_{10}^2c_s^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$18\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 108\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 18\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2 - 36\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9 +$
$6\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9 + 72\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} - \omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_{10}v_1^2\omega_5^2\omega_{15}^2\omega_9 - 15\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$36\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15}^2\omega_9 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 24\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15}^2\omega_9\omega_{12} + 24\omega_{10}c_s^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$12\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 18v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$36\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 9\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 -$
$24\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 72\omega_{10}^2v_1^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 15\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 18\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} +$
$15\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12} + 18\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}^2\omega_9\omega_{12} - 72\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} -$
$6\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12} - 36\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 9\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 18\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 5\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$36\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 36\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$5\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9 - 102\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 24\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$12\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 24\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 36\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}c_s^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{15}^2\omega_9\omega_{12} +$
$\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 45\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9 + 12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2 - 12\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} +$
$36\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 48\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2 -$
$6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12} - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 18\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{10}^2v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 36\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{15}^2\omega_9 + 6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 18\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2\omega_9\omega_{12} -$
$6\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 6v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{15}^2\omega_9 + 54\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12} +$
$6\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 18\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12} - 18\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} - 12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 -$
$12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 15\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 36v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}^2\omega_9 + 24\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_9\omega_{12} +$
$6\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9 + 12\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}^2 + 6\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2 -$
$6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} + 27\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 60\omega_{10}^2c_s^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2)\frac{\rho}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D_xD_y^3}v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D_xD_y^3}v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D_xD_y^3}v_2} = (12\omega_{10}c_s^2\omega_5^3\omega_{15} + 12\omega_5^3\omega_{21}\omega_{15} - 36\omega_{10}\omega_5^3v_2^2\omega_{15}\omega_9 + 12\omega_{10}c_s^2\omega_5^2\omega_9\omega_{12} - 18\omega_{10}\omega_5^3v_2^2\omega_{15}\omega_{12} + 36\omega_{10}\omega_5^2v_2^2\omega_9\omega_{12} -$
$36\omega_{10}\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} + 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12} - 12\omega_{10}\omega_5^2\omega_{15}\omega_9 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9 +$
$54\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12} - 12\omega_{10}\omega_5^2\omega_9\omega_{12} + 36\omega_{10}\omega_5v_2^2\omega_{21}\omega_9\omega_{12} - 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 36\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_{10}\omega_5\omega_{21}\omega_9\omega_{12} + 5\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_{10}\omega_5^2v_2^2\omega_{15}\omega_9 - 54\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_9\omega_{12} +$
$18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9 - 18\omega_{10}\omega_5^3v_2^2\omega_9\omega_{12} - 36\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9 - \omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2\omega_5^3\omega_{21}\omega_{15} -$
$12\omega_{10}c_s^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 6\omega_{10}\omega_5^3\omega_{15}\omega_{12} + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} - 15\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 18\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$6\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12} + 12\omega_{10}\omega_5^3\omega_{15}\omega_9 - 5\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}\omega_5^3\omega_{15} + 36\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9 + 18\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 36\omega_5^3v_2^2\omega_{21}\omega_{15} -$
$5c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 18\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12} + 12\omega_5^2\omega_{21}\omega_{15}\omega_9 - 18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_9\omega_{12} + 18\omega_{10}\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} -$
$12\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_5^3\omega_{21}\omega_{15}\omega_9 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_9\omega_{12} + \omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_{10}\omega_5^3v_2^2\omega_{15} -$

$6\omega_{10}\omega_5^3\omega_{15}\omega_9\omega_{12} + 6\omega_{10}\omega_5^3\omega_9\omega_{12} - 3\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 18\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12})\frac{c_s^2\rho}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = (-12\omega_7c_s^2\omega_1 + 3\omega_7\omega_1^3v_2^2 - 6\omega_1^3\omega_5 + 12c_s^2\omega_1\omega_5 - 54\omega_1^2\omega_5v_2^2 + 18\omega_7c_s^2\omega_1\omega_5 - 3\omega_7\omega_1^2\omega_5v_2^2 + 18\omega_7\omega_1^2v_2^2 + \omega_7c_s^2\omega_1^3 + 18\omega_1^2\omega_5 + 6\omega_7c_s^2\omega_1^2 + 18\omega_1^3\omega_5v_2^2 + 6c_s^2\omega_1^3\omega_5 - 12\omega_1^2 - 12\omega_1\omega_5 - 12\omega_7c_s^2\omega_5 - 5\omega_7c_s^2\omega_1^2\omega_5 + 12\omega_7\omega_1 - 18\omega_1^3v_2^2 + 6\omega_1^3 - 36\omega_7\omega_1v_2^2 - 6\omega_7\omega_1^2 + 12c_s^2\omega_1^2 + \omega_7\omega_1^2\omega_5 - 18c_s^2\omega_1^2\omega_5 - 6c_s^2\omega_1^3 + 36\omega_1^2v_2^2 - \omega_7\omega_1^3 + 36\omega_1\omega_5v_2^2 - \omega_7c_s^2\omega_1^3\omega_5)\frac{c_s^2\rho}{12\omega_7\omega_1^3\omega_5}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = (60\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 - 108\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 222\omega_3\omega_4\omega_1v_2^2\omega_2^3 + \omega_3\omega_4\omega_1^2v_1^2\omega_2^3 - 20\omega_3\omega_4c_s^2\omega_1^3 - 28\omega_3\omega_4c_s^4\omega_1\omega_2^2 + 153\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 12\omega_3\omega_4\omega_1v_2^2\omega_2^2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 - 54\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3c_s^2\omega_1\omega_2^3 + 138\omega_3\omega_4\omega_1^3v_2^2\omega_2 + 94\omega_3\omega_4c_s^4\omega_1\omega_2^3 + \omega_3\omega_4\omega_1^3v_1^4\omega_2^2 - 8\omega_4c_s^2\omega_1\omega_2^3 + 192\omega_3\omega_4\omega_1^2v_2^4\omega_2 - 168\omega_3\omega_4\omega_1^2v_2^4\omega_2^2 - 60\omega_3\omega_4\omega_1^3v_2^2 - 288\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2 - 60\omega_3\omega_4c_s^2\omega_1v_2^2\omega_2^2 + 32\omega_3\omega_4c_s^2\omega_1\omega_2^2 - 81\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 - 264\omega_3\omega_4v_2^4\omega_2^3 - 138\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 36\omega_3c_s^4\omega_1\omega_2^3 - 3\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 54\omega_3\omega_4c_s^2\omega_1\omega_2^3 + 40\omega_3\omega_4c_s^2\omega_2^3 + 8\omega_3\omega_4\omega_1^2\omega_2 + 432\omega_3\omega_4c_s^2\omega_1v_2^2\omega_2^3 - 312\omega_3\omega_4c_s^2v_2^2\omega_2^3 + 8\omega_4c_s^4\omega_1\omega_2^3 - 24\omega_3\omega_4\omega_1v_2^4\omega_2^2 - 9\omega_4c_s^2\omega_1^3\omega_2^3 - 3\omega_3\omega_4c_s^4\omega_1^3\omega_2^3 + 8\omega_3\omega_4c_s^4\omega_1^2\omega_2 - 240\omega_3\omega_4\omega_1^3v_2^4\omega_2 - 36\omega_3c_s^4\omega_1^2\omega_2^3 - 9\omega_3c_s^2\omega_1^3\omega_2^3 + 42\omega_3\omega_4c_s^2\omega_1^3\omega_2 - 90\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 + 24\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - \omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 96\omega_3\omega_4\omega_1^2v_2^2\omega_2 - 18\omega_4c_s^4\omega_1^2\omega_2^3 + 27\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 + 96\omega_3\omega_4\omega_1^3v_2^4 + 8\omega_4c_s^4\omega_1^3\omega_2 + 17\omega_3\omega_4c_s^4\omega_1^2\omega_2^2 + 408\omega_3\omega_4\omega_1v_2^4\omega_2^3 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 8\omega_3\omega_4\omega_2^3 - \omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 20\omega_4c_s^4\omega_1^2\omega_2^2 - 54\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 27\omega_3c_s^2\omega_1^3v_2^2\omega_2^3 + 16\omega_3\omega_4c_s^4\omega_1^3 - 6\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 153\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 9\omega_4c_s^4\omega_1^3\omega_2^3 + 144\omega_3\omega_4v_2^2\omega_2^3 + 24\omega_4c_s^2\omega_1^3v_2^2\omega_2 + 81\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 - 16\omega_3\omega_4c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1^3 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_1v_2^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 - 29\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 - 68\omega_3\omega_4c_s^4\omega_2^3 - 32\omega_3\omega_4c_s^4\omega_1^3\omega_2 - 8\omega_4c_s^2\omega_1^3\omega_2 + 18\omega_4c_s^2\omega_1^2\omega_2^3 + 24\omega_4c_s^2\omega_1v_2^2\omega_2^3 - 24\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2^2 + 120\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2 + 84\omega_3\omega_4\omega_1^2v_2^2\omega_2^2 + 3\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 - 18\omega_4c_s^4\omega_1^3\omega_2^2 - 20\omega_4c_s^2\omega_1^2\omega_2^2 + 144\omega_3\omega_4c_s^2\omega_1^3v_2^2 + 138\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 10\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_y^4\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^4\rho} = (c_s^2\omega + 6v_2^4 + 3\omega v_2^2 + 2c_s^4 - 3\omega v_2^4 + 24c_s^2v_2^2 - c_s^4\omega - 2c_s^2 - 6v_2^2 - 12c_s^2\omega v_2^2)\frac{v_1}{24\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho} = (-96\omega_{10}^2\omega_5v_2^2\omega_{15} - 144\omega_{10}^2c_s^2\omega_5v_2^2 + 72\omega_{10}c_s^2\omega_5^2v_2^2\omega_{15} - 216\omega_{10}^2c_s^2v_2^2\omega_{15} - 12\omega_{10}^2\omega_5^2v_2^2 - 3\omega_{10}^2\omega_5^2v_2^4\omega_{15}^2 - 48\omega_{10}^2c_s^2\omega_5\omega_{15} - 36\omega_{10}\omega_5^2v_2^2\omega_{15}^2 - 24\omega_{10}^2\omega_5v_2^4 - 14\omega_{10}c_s^2\omega_5^2\omega_{15}^2 + 12c_s^2\omega_5^2\omega_{15}^2 - 48\omega_{10}\omega_5v_2^4\omega_{15} - 126\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15} + 36\omega_5^2v_2^2\omega_{15}^2 + 12\omega_{10}^2c_s^4\omega_5^2 - 48\omega_{10}^2v_2^4\omega_{15} - 12\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15}^2 + 24\omega_{10}c_s^4\omega_{15}^2 - 144c_s^2\omega_5^2v_2^2\omega_{15}^2 - 96\omega_{10}\omega_5v_2^4\omega_{15}^2 - 24\omega_{10}^2c_s^4\omega_5 + 72\omega_5v_2^4\omega_{15}^2 + 24\omega_{10}^2c_s^2\omega_{15} - 24\omega_{10}\omega_5^2v_2^2\omega_{15} - 48\omega_{10}v_2^2\omega_{15}^2 + 48\omega_{10}^2c_s^4\omega_5\omega_{15} + 14\omega_{10}c_s^4\omega_5^2\omega_{15}^2 - 30\omega_{10}^2\omega_5^2v_2^4\omega_{15} - 12c_s^4\omega_5^2\omega_{15}^2 + 150\omega_{10}c_s^2\omega_5^2v_2^2\omega_{15}^2 - 12\omega_{10}^2c_s^4\omega_5^2\omega_{15} + 288c_s^2\omega_5v_2^2\omega_{15}^2 + 36\omega_{10}\omega_5^2v_2^4\omega_{15}^2 - 48\omega_{10}c_s^4\omega_5\omega_{15}^2 + 24c_s^4\omega_5\omega_{15}^2 + 48\omega_{10}\omega_5v_2^2\omega_{15} - 36\omega_5^2v_2^4\omega_{15}^2 - 12\omega_{10}^2c_s^2\omega_5^2 + 96\omega_{10}^2\omega_5v_2^4\omega_{15} + \omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 - 432\omega_{10}c_s^2\omega_5v_2^2\omega_{15}^2 + 3\omega_{10}^2\omega_5^2v_2^2\omega_{15}^2 - 144\omega_{10}c_s^2\omega_5v_2^2\omega_{15} + 12\omega_{10}^2c_s^2\omega_5^2\omega_{15} + 48\omega_{10}c_s^2\omega_5\omega_{15}^2 + 12\omega_{10}^2\omega_5^2v_2^4 + 30\omega_{10}^2\omega_5^2v_2^2\omega_{15} - 24c_s^2\omega_5\omega_{15}^2 + 72\omega_{10}^2c_s^2\omega_5^2v_2^2 + 48\omega_{10}^2v_2^2\omega_{15} + 96\omega_{10}\omega_5v_2^2\omega_{15}^2 - 24\omega_{10}c_s^2\omega_{15}^2 + 24\omega_{10}^2c_s^2\omega_5 - 72\omega_5v_2^2\omega_{15}^2 + 216\omega_{10}c_s^2v_2^2\omega_{15}^2 - \omega_{10}^2c_s^4\omega_5^2\omega_{15}^2 + 24\omega_{10}\omega_5^2v_2^4\omega_{15} - 24\omega_{10}^2c_s^4\omega_{15} + 432\omega_{10}^2c_s^2\omega_5v_2^2\omega_{15} + 24\omega_{10}^2\omega_5v_2^2 + 48\omega_{10}v_2^4\omega_{15}^2)\frac{v_1}{24\omega_{10}^2\omega_5^2\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^4\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho} = (6v_2^4 - 3\omega_{10}v_2^4 - \omega_{10}c_s^4 + 2c_s^4 + \omega_{10}c_s^2 + 24c_s^2v_2^2 - 12\omega_{10}c_s^2v_2^2 - 2c_s^2 - 6v_2^2 + 3\omega_{10}v_2^2)\frac{v_1}{24\omega_{10}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^4\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^4\rho} = (c_s^2\omega_5 + 6v_2^4 + 3\omega_5v_2^2 + 2c_s^4 - 12c_s^2\omega_5v_2^2 - c_s^4\omega_5 + 24c_s^2v_2^2 - 2c_s^2 - 6v_2^2 - 3\omega_5v_2^4)\frac{v_1}{24\omega_5}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^4\rho} = (-6\omega_1v_2^2 - 9\omega_1v_2^4\omega_2 + 2c_s^4\omega_1 - 12v_2^2\omega_2 + 4c_s^4\omega_2 - 3c_s^4\omega_1\omega_2 + 9\omega_1v_2^2\omega_2 + 24c_s^2\omega_1v_2^2 - 2c_s^2\omega_1 + 12v_2^4\omega_2 - 4c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 36c_s^2\omega_1v_2^2\omega_2 + 48c_s^2v_2^2\omega_2 + 6\omega_1v_2^4)\frac{v_1}{72\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y^4v_1}$ **at** $\frac{\partial^4v_1}{\partial x_2^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^4v_1} = (-84c_s^2\omega^2v_2^2 + 36c_s^2\omega + 3\omega^3v_2^4 - 72v_2^4 + c_s^2\omega^3 - 108\omega v_2^2 + 6c_s^2\omega^3v_2^2 - 14c_s^2\omega^2 + 48c_s^4 - 42\omega^2v_2^4 + 108\omega v_2^4 + 42\omega^2v_2^2 - 144c_s^2v_2^2 - 72c_s^4\omega - 24c_s^2 + 30c_s^4\omega^2 + 72v_2^2 - 3c_s^4\omega^3 + 216c_s^2\omega v_2^2 - 3\omega^3v_2^2)\frac{\rho}{24\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^4v_1} = (-24c_s^4\omega_5^2\omega_{15} - 24\omega_5^2v_2^4 - 6c_s^2\omega_5^3\omega_{15} - 48\omega_5v_2^4\omega_{15} - 3c_s^4\omega_5^3\omega_{15}^2 + 3\omega_5^3v_2^4\omega_{15}^2 - 8c_s^2\omega_5^2\omega_{15}^2 + 48c_s^2\omega_5^2v_2^2\omega_{15} + 12c_s^2\omega_5^3v_2^2 + 24\omega_5^2v_2^2\omega_{15}^2 + 24c_s^2\omega_5^2\omega_{15} + 24c_s^4\omega_{15}^2 - 72c_s^2\omega_5^2v_2^2\omega_{15}^2 - 72\omega_5^2v_2^2\omega_{15} + 12\omega_5^3v_2^4 + 24\omega_5v_2^4\omega_{15}^2 - 18\omega_5^3v_2^4\omega_{15} + 6c_s^4\omega_5^3\omega_{15} - 24c_s^2\omega_5^2v_2^2 + c_s^2\omega_5^3\omega_{15}^2 + 24c_s^4\omega_5^2\omega_{15}^2 - 12\omega_5^3v_2^2 + 48\omega_5v_2^2\omega_{15} + 156c_s^2\omega_5v_2^2\omega_{15}^2 - 3\omega_5^3v_2^2\omega_{15}^2 - 12c_s^2\omega_5^3v_2^2\omega_{15} - 48c_s^4\omega_5\omega_{15}^2 - 24\omega_5^2v_2^4\omega_{15}^2 - 24c_s^2\omega_5\omega_{15} + 12c_s^2\omega_5\omega_{15}^2 + 24\omega_5^2v_2^2 + 24c_s^4\omega_5\omega_{15} - 96c_s^2v_2^2\omega_{15}^2 + 72\omega_5^2v_2^4\omega_{15} - 24\omega_5v_2^2\omega_{15}^2 - 24c_s^2\omega_5v_2^2\omega_{15} + 18\omega_5^3v_2^2\omega_{15} + 6c_s^2\omega_5^3v_2^2\omega_{15}^2)\frac{\rho}{24\omega_5^3\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^4v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^4v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_1} = (-24c_s^4\omega_5^2\omega_{15} - 72\omega_5^2v_2^4 - 6c_s^2\omega_5^3\omega_{15} - 3c_s^4\omega_5^3\omega_{15}^2 + 3\omega_5^3v_2^4\omega_{15}^2 - 8c_s^2\omega_5^2\omega_{15}^2 + 144c_s^2\omega_5^2v_2^2\omega_{15} + 108c_s^2\omega_5^3v_2^2 + 12\omega_5^2v_2^2\omega_{15}^2 + 24c_s^2\omega_5^2\omega_{15} + 24c_s^4\omega_{15}^2 - 12c_s^2\omega_5^2v_2^2\omega_{15}^2 - 72\omega_5^2v_2^2\omega_{15} + 36\omega_5^3v_2^4 - 30\omega_5^3v_2^4\omega_{15} + 6c_s^4\omega_5^3\omega_{15} - 216c_s^2\omega_5^2v_2^2 + c_s^2\omega_5^3\omega_{15}^2 + 24c_s^4\omega_5^2\omega_{15}^2 - 36\omega_5^3v_2^2 - 36c_s^2\omega_5v_2^2\omega_{15}^2 - 3\omega_5^3v_2^2\omega_{15}^2 - 72c_s^2\omega_5^3v_2^2\omega_{15} - 48c_s^4\omega_5\omega_{15}^2 - 12\omega_5^2v_2^4\omega_{15}^2 - 24c_s^2\omega_5\omega_{15} + 12c_s^2\omega_5\omega_{15}^2 + 72\omega_5^2v_2^2 + 24c_s^4\omega_5\omega_{15} + 72\omega_5^2v_2^4\omega_{15} + 72c_s^2\omega_5v_2^2\omega_{15} + 30\omega_5^3v_2^2\omega_{15} + 6c_s^2\omega_5^3v_2^2\omega_{15}^2)\frac{\rho}{24\omega_5^3\omega_{15}^2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^4_y v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^4_y v_1} = (-24\omega_7c_s^2\omega_1 + 30\omega_7\omega_1^3v_2^2 + 108c_s^2\omega_1^3v_2^2 + 3\omega_7^2\omega_1^3v_2^4 + 24\omega_7^2c_s^4\omega_1^2 - 3\omega_7^2c_s^4\omega_1^3 + 144\omega_7c_s^2\omega_1^2v_2^2 - 72\omega_1^2v_2^4 - 12\omega_7^2\omega_1^2v_2^4 - 36\omega_7^2c_s^2\omega_1v_2^2 - 216c_s^2\omega_1^2v_2^2 - 72\omega_7\omega_1^2v_2^2 - 6\omega_7c_s^2\omega_1^3 - 72\omega_7c_s^2\omega_1^3v_2^2 + 36\omega_1^3v_2^4 - 48\omega_7^2c_s^4\omega_1 + 24\omega_7c_s^2\omega_1^2 + 72\omega_7\omega_1^2v_2^4 + \omega_7^2c_s^2\omega_1^3 + 12\omega_7^2\omega_1^2v_2^2 - 12\omega_7^2c_s^2\omega_1^2v_2^2 + 24\omega_7c_s^4\omega_1 - 36\omega_1^3v_2^2 - 8\omega_7^2c_s^2\omega_1^2 + 12\omega_7^2c_s^2\omega_1 - 3\omega_7^2\omega_1^3v_2^2 - 24\omega_7c_s^4\omega_1^2 - 30\omega_7\omega_1^3v_2^4 + 24\omega_7^2c_s^4 + 72\omega_7c_s^2\omega_1v_2^2 + 72\omega_1^2v_2^2 + 6\omega_7^2c_s^2\omega_1^3v_2^2 + 6\omega_7c_s^4\omega_1^3)\frac{\rho}{24\omega_7^2\omega_1^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^4_y v_1} = (-12\omega_3^2\omega_4c_s^4\omega_1^2 - 15\omega_3^2\omega_4\omega_1^3v_2^4 - 12\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2 + 36\omega_3\omega_4^2\omega_1^2v_2^4 + 36\omega_3\omega_4\omega_1^2v_2^2 - 3\omega_3^2\omega_4^2\omega_1^3v_2^2 + 12\omega_3^2\omega_4^2c_s^2\omega_1 - 9\omega_4^2\omega_1^3v_2^2 - 18\omega_3^2\omega_1^2v_2^4 + 12\omega_3\omega_4^2c_s^4\omega_1 + 27\omega_4^2c_s^2\omega_1^3v_2^2 + 3\omega_3^2\omega_4c_s^4\omega_1^3 + 27\omega_3^2c_s^2\omega_1^3v_2^2 + 24\omega_3^2\omega_4^2c_s^4 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_2^2 + \omega_3^2\omega_4^2c_s^2\omega_1^3 + 12\omega_3^2\omega_4^2\omega_1^2v_2^2 - 18\omega_3\omega_4\omega_1^3v_2^2 - 15\omega_3\omega_4^2\omega_1^3v_2^4 - 12\omega_3\omega_4^2c_s^4\omega_1^2 + 36\omega_3^2\omega_4\omega_1^2v_2^4 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 - 54\omega_3^2c_s^2\omega_1^2v_2^2 - 36\omega_3\omega_4^2c_s^2\omega_1^3v_2^2 - 8\omega_3^2\omega_4^2c_s^2\omega_1^2 + 12\omega_3^2\omega_4c_s^4\omega_1 + 9\omega_3^2\omega_1^3v_2^4 + 18\omega_4^2\omega_1^2v_2^2 + 36\omega_3^2\omega_4c_s^2\omega_1v_2^2 + 3\omega_3\omega_4^2c_s^4\omega_1^3 - 54\omega_4^2c_s^2\omega_1^2v_2^2 - 12\omega_3\omega_4^2c_s^2\omega_1 + 15\omega_3\omega_4^2\omega_1^3v_2^2 - 36\omega_3^2\omega_4\omega_1^2v_2^2 - 3\omega_3^2\omega_4c_s^2\omega_1^3 - 12\omega_3^2\omega_4^2\omega_1^2v_2^4 + 18\omega_3\omega_4\omega_1^3v_2^4 + 72\omega_3^2\omega_4c_s^2\omega_1^2v_2^2 + 12\omega_3^2\omega_4c_s^2\omega_1^2 - 18\omega_4^2\omega_1^2v_2^4 - 9\omega_3^2\omega_1^3v_2^2 - 108\omega_3\omega_4c_s^2\omega_1^2v_2^2 - 48\omega_3^2\omega_4^2c_s^4\omega_1 - 36\omega_3\omega_4\omega_1^2v_2^4 - 36\omega_3^2\omega_4c_s^2\omega_1^3v_2^2 + 3\omega_3^2\omega_4^2\omega_1^3v_2^4 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2 + 36\omega_3^2\omega_4^2c_s^2\omega_1v_2^2 + 15\omega_3^2\omega_4\omega_1^3v_2^2 - 12\omega_3^2\omega_4c_s^2\omega_1 - 3\omega_3\omega_4^2c_s^2\omega_1^3 - 36\omega_3\omega_4^2\omega_1^2v_2^2 - 3\omega_3^2\omega_4^2c_s^4\omega_1^3 - 36\omega_3^2\omega_4^2c_s^2\omega_1v_2^2 + 18\omega_3^2\omega_1^2v_2^2 + 9\omega_4^2\omega_1^3v_2^4 + 12\omega_3\omega_4^2c_s^2\omega_1^2 + 54\omega_3\omega_4c_s^2\omega_1^3v_2^2)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$

coefficient $C^{(1)}_{\mathrm{D}^4_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^4_y v_2} = (-4 - 3c_s^2\omega - 5\omega v_2^2 + 2\omega + 6c_s^2 + 10v_2^2)\frac{\rho v_1 v_2}{12\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2} = (168\omega_{10}^2\omega_5v_2^2\omega_{15} + 24\omega_{10}\omega_5\omega_{15} + 24\omega_{10}^2\omega_5^2v_2^2 + 120\omega_{10}^2c_s^2\omega_5\omega_{15} + 61\omega_{10}\omega_5^2v_2^2\omega_{15}^2 + 36\omega_{10}^2\omega_{15} + 39\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 36c_s^2\omega_5^2\omega_{15}^2 - 60\omega_5^2v_2^2\omega_{15}^2 + 21\omega_{10}^2\omega_5^2\omega_{15} + 2\omega_{10}^2\omega_5^2\omega_{15}^2 - 60\omega_{10}^2c_s^2\omega_{15} + 36\omega_{10}\omega_5^2v_2^2\omega_{15} + 12\omega_{10}c_s^2\omega_5^2\omega_{15} + 84\omega_{10}v_2^2\omega_{15}^2 + 72\omega_{10}\omega_5\omega_{15}^2 - 48\omega_5\omega_{15}^2 - 25\omega_{10}\omega_5^2\omega_{15}^2 + 24\omega_5^2\omega_{15}^2 + 24\omega_{10}^2\omega_5 - 72\omega_{10}\omega_5v_2^2\omega_{15} + 24\omega_{10}^2c_s^2\omega_5^2 - 3\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 - 24\omega_{10}c_s^2\omega_5\omega_{15} - 36\omega_{10}\omega_{15}^2 - 5\omega_{10}^2\omega_5^2v_2^2\omega_{15}^2 - 33\omega_{10}^2c_s^2\omega_5^2\omega_{15} - 120\omega_{10}c_s^2\omega_5\omega_{15}^2 - 51\omega_{10}^2\omega_5^2v_2^2\omega_{15} + 72c_s^2\omega_5\omega_{15}^2 - 72\omega_{10}^2\omega_5\omega_{15} - 12\omega_{10}^2\omega_5^2 - 84\omega_{10}^2v_2^2\omega_{15} - 168\omega_{10}\omega_5v_2^2\omega_{15}^2 + 60\omega_{10}c_s^2\omega_{15}^2 - 48\omega_{10}^2c_s^2\omega_5 + 120\omega_5v_2^2\omega_{15}^2 - 12\omega_{10}\omega_5^2\omega_{15} - 48\omega_{10}^2\omega_5v_2^2)\frac{\rho v_1 v_2}{12\omega_{10}^2\omega_5^2\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^4_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_2} = (-4 + 2\omega_{10} - 3\omega_{10}c_s^2 + 6c_s^2 + 10v_2^2 - 5\omega_{10}v_2^2)\frac{\rho v_1 v_2}{12\omega_{10}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^4_y v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^4_y v_2} = (-4 - 3c_s^2\omega_5 - 5\omega_5v_2^2 + 2\omega_5 + 6c_s^2 + 10v_2^2)\frac{\rho v_1 v_2}{12\omega_5}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^4_y v_2} = (10\omega_1v_2^2 + 20v_2^2\omega_2 + 6\omega_1\omega_2 - 4\omega_1 - 15\omega_1v_2^2\omega_2 + 6c_s^2\omega_1 - 8\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2)\frac{\rho v_1 v_2}{36\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^3\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = (-36\omega_6^2\omega_{13}^2v_1^4\omega_9 + 20\omega_6\omega_{13}v_1^4\omega_9^3 - 72\omega_6^2\omega_{13}c_s^2v_1^2\omega_9 + 4\omega_6^2\omega_{13}^2c_s^4\omega_9^2 - 4\omega_6v_1^4\omega_9^3 + 4\omega_6^2\omega_{13}c_s^2\omega_9 - 8\omega_{13}^2v_1^2\omega_9^2 - 32\omega_6^2\omega_{13}v_1^2\omega_9^2 - 4\omega_6^2c_s^2\omega_9^3 - 4\omega_{13}c_s^4\omega_9^3 - 16\omega_6\omega_{13}v_1^4\omega_9^2 + 96\omega_6^2\omega_{13}^2c_s^2v_1^2 + 4\omega_6^2c_s^2\omega_9^2 + 13\omega_6^2\omega_{13}v_1^2\omega_9^3 - 24\omega_6^2\omega_{13}^2v_1^2 + 8\omega_6\omega_{13}^2c_s^2\omega_9^2 - 20\omega_6\omega_{13}^2v_1^2\omega_9 - 4\omega_6\omega_{13}^2c_s^2\omega_9 - 48\omega_6\omega_{13}c_s^2v_1^2\omega_9^2 + 20\omega_6\omega_{13}^2v_1^2\omega_9^2 + 4\omega_6^2v_1^2\omega_9^2 + 4\omega_6^2\omega_{13}c_s^2\omega_9^3 - 51\omega_6^2\omega_{13}c_s^2v_1^2\omega_9^3 - 8\omega_{13}v_1^4\omega_9^3 + 8\omega_6^2\omega_{13}^2c_s^4 - 8\omega_6^2\omega_{13}c_s^2\omega_9^2 - 4\omega_6^2v_1^2\omega_9^3 + 84\omega_6\omega_{13}c_s^2v_1^2\omega_9^3 - 4\omega_{13}^2c_s^2\omega_9^2 - 24\omega_6c_s^2v_1^2\omega_9^3 + 20\omega_6^2\omega_{13}v_1^2\omega_9 + 13\omega_6^2\omega_{13}^2v_1^4\omega_9^2 - 4\omega_6c_s^4\omega_9^3 + 36\omega_{13}^2c_s^2v_1^2\omega_9^2 + 8\omega_6\omega_{13}c_s^4\omega_9^3 + 120\omega_6^2\omega_{13}c_s^2v_1^2\omega_9^2 - 12\omega_6^2\omega_{13}^2c_s^4\omega_9 + 4\omega_{13}c_s^2\omega_9^3 + 16\omega_6\omega_{13}v_1^2\omega_9^2 - 8\omega_6^2\omega_{13}^2c_s^2 - 4\omega_6^2c_s^4\omega_9^2 - 13\omega_6^2\omega_{13}v_1^4\omega_9^3 - 144\omega_6^2\omega_{13}^2c_s^2v_1^2\omega_9 - 8\omega_6\omega_{13}^2c_s^4\omega_9^2 + 20\omega_6\omega_{13}^2v_1^4\omega_9 + 72\omega_6\omega_{13}^2c_s^2v_1^2\omega_9 + 36\omega_6^2\omega_{13}^2v_1^2\omega_9 - 20\omega_6\omega_{13}v_1^2\omega_9^3 - 4\omega_6^2\omega_{13}^2c_s^2\omega_9^2 + 4\omega_6v_1^2\omega_9^3 - 4\omega_6^2\omega_{13}c_s^4\omega_9 + 8\omega_{13}^2v_1^4\omega_9^2 + 32\omega_6^2\omega_{13}v_1^4\omega_9^2 + 4\omega_6^2c_s^4\omega_9^3 + 8\omega_6^2\omega_{13}c_s^4\omega_9^2 + 4\omega_6^2v_1^4\omega_9^3 + 4\omega_{13}^2c_s^4\omega_9^2 - 36\omega_{13}c_s^2v_1^2\omega_9^3 - 20\omega_6^2\omega_{13}v_1^4\omega_9 - 13\omega_6^2\omega_{13}^2v_1^2\omega_9^2 + 4\omega_6c_s^2\omega_9^3 - 84\omega_6\omega_{13}^2c_s^2v_1^2\omega_9^2 - 8\omega_6\omega_{13}c_s^2\omega_9^3 - 24\omega_6^2c_s^2v_1^2\omega_9^2 + 12\omega_6^2\omega_{13}^2c_s^2\omega_9 + 51\omega_6^2\omega_{13}^2c_s^2v_1^2\omega_9^2 + 24\omega_6^2\omega_{13}^2v_1^4 + 4\omega_6\omega_{13}^2c_s^4\omega_9 - 20\omega_6\omega_{13}^2v_1^4\omega_9^2 - 4\omega_6^2v_1^4\omega_9^2 - 4\omega_6^2\omega_{13}c_s^4\omega_9^3 + 24\omega_6^2c_s^2v_1^2\omega_9^3 + 8\omega_{13}v_1^2\omega_9^3)\frac{v_3}{4\omega_6^2\omega_{13}^2\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = (8\omega_3^2\omega_1\omega_2^2 - 60\omega_3^2\omega_1 v_1^2\omega_2^3 - 48\omega_3^2\omega_1^2 v_1^2\omega_2^2 v_3^2 - 4\omega_3 c_s^2\omega_1^2\omega_2^2 v_3^2 + 40\omega_3^2 c_s^2\omega_1^2\omega_2 + 4\omega_3^2\omega_1^2\omega_2^2 v_3^2 - 324\omega_3^2 c_s^2\omega_1^3 v_1^2\omega_2 - 84\omega_3^2 c_s^4\omega_1^3\omega_2 - 72\omega_3^2 v_1^2\omega_2^3 v_3^2 - 6\omega_3^2 c_s^4\omega_1^2\omega_2^3 + 12c_s^2\omega_1^3\omega_2^2 - 216\omega_3^2 c_s^2\omega_1 v_1^2\omega_2^2 + 12c_s^2\omega_1^2\omega_2^3 v_3^2 + 84\omega_3^2\omega_1^3 v_1^2\omega_2 - 5\omega_3^2 c_s^2\omega_1^3\omega_2^2 + 48\omega_3^2\omega_1 v_1^2\omega_2^2 + 36c_s^4\omega_1^2\omega_2^3 - 8\omega_3 c_s^2\omega_1\omega_2^3 + 16\omega_3^2 c_s^2\omega_1^3 v_3^2 + 8\omega_3^2\omega_1\omega_2^3 - 36\omega_3^2 c_s^4\omega_2^3 + 108\omega_3^2 c_s^2\omega_1 v_1^2\omega_2^3 + 4\omega_3^2\omega_1^3 + 42\omega_3^2 c_s^4\omega_1^2\omega_2^2 - 2\omega_3^2 c_s^2\omega_1^2\omega_2^2 v_3^2 + 72\omega_3^2\omega_1^2 v_1^4\omega_2^2 + 48\omega_3^2 v_1^4\omega_2^3 - 36\omega_3^2 c_s^4\omega_1^2\omega_2 - 48\omega_3^2\omega_1^3 v_1^2 - 24\omega_3^2\omega_1^2 v_1^2\omega_2^2 v_3^2 - 24\omega_3^2\omega_1^3 v_1^2\omega_2^2 + 5\omega_3^2 c_s^2\omega_1^2\omega_2^3 + \omega_3^2\omega_1^2\omega_2^3 v_3^2 + 72\omega_3^2 c_s^4\omega_1^3 + 56\omega_3^2 c_s^2\omega_1^3\omega_2 - 18\omega_3 c_s^2\omega_1^2\omega_2^3 v_3^2 - 8\omega_3^2\omega_2^3 + 24\omega_3^2\omega_1^3 v_1^2 v_3^2 - 36c_s^4\omega_1^3\omega_2^2 - 4\omega_3 c_s^2\omega_1^3\omega_2 v_3^2 + 4\omega_3^2\omega_1^3\omega_2 v_3^2 + 6\omega_3^2 c_s^4\omega_1^3\omega_2^2 + 72\omega_3^2 c_s^2\omega_1^3 v_1^2\omega_2^2 + 24\omega_3^2\omega_1^3 v_1^2\omega_2^2 v_3^2 - 2\omega_3^2 c_s^2\omega_1^2\omega_2^3 v_3^2 + 24\omega_3 c_s^4\omega_1\omega_2^3 - 20\omega_3^2 c_s^2\omega_1^3\omega_2 v_3^2 - 12c_s^2\omega_1^2\omega_2^3 + 8\omega_3^2\omega_2^3 v_3^2 - 34\omega_3^2 c_s^2\omega_1^2\omega_2^2 - 48\omega_3^2\omega_1^3 v_1^2\omega_2 v_3^2 - 36\omega_3^2\omega_1^3 v_1^4\omega_2 + 2\omega_3^2 c_s^2\omega_1^3\omega_2^2 v_3^2 - 12\omega_3 c_s^4\omega_1^3\omega_2 - 72\omega_3^2\omega_1 v_1^4\omega_2^2 - 54\omega_3 c_s^4\omega_1^2\omega_2^3 + 24\omega_3^2\omega_1 v_1^2\omega_2^2 v_3^2 - 4\omega_3^2\omega_1^2\omega_2 - 24\omega_3^2\omega_1^2 v_1^2\omega_2 + 20\omega_3^2 c_s^2\omega_2^3 - 8\omega_3^2 c_s^2\omega_1\omega_2^2 - 8\omega_3^2\omega_1\omega_2^3 v_3^2 + 8\omega_3 c_s^2\omega_1\omega_2^3 v_3^2 + 24\omega_3^2\omega_1^3 v_1^4 - 12\omega_3 c_s^4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_1 v_1^4\omega_2^3 + 22\omega_3^2 c_s^2\omega_1\omega_2^3 v_3^2 - 4\omega_3^2\omega_1^3 v_3^2 - 22\omega_3^2 c_s^2\omega_1\omega_2^3 - \omega_3^2\omega_1^3\omega_2^2 v_3^2 + 18\omega_3 c_s^2\omega_1^3\omega_2^2 v_3^2 - 18\omega_3 c_s^2\omega_1^3\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_1\omega_2^2 v_3^2 + 24\omega_3^2\omega_1^2 v_1^2\omega_2^3 + 18\omega_3 c_s^2\omega_1^2\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 + 96\omega_3^2\omega_1 v_1^2\omega_2^3 v_3^2 - 4\omega_3^2\omega_1^3\omega_2 + 4\omega_3 c_s^2\omega_1^3\omega_2 + 216\omega_3^2 c_s^2\omega_1^3 v_1^2 + 216\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_2^2 - 4\omega_3^2 c_s^2\omega_1^2\omega_2 v_3^2 - 24\omega_3^2\omega_1^2 v_1^2\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 + 4\omega_3 c_s^2\omega_1^2\omega_2^2 + 4\omega_3^2\omega_1^2\omega_2 v_3^2 + 24\omega_3^2 v_1^2\omega_2^3 - 20\omega_3^2 c_s^2\omega_2^3 v_3^2 + 24\omega_3^2\omega_1^2 v_1^2\omega_2 v_3^2 + 42\omega_3^2 c_s^4\omega_1\omega_2^3 - 12c_s^2\omega_1^3\omega_2^2 v_3^2 + 8\omega_3^2 c_s^2\omega_1\omega_2^2 v_3^2 - 52\omega_3^2 c_s^2\omega_1^3 - 72\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_2^3 + 54\omega_3 c_s^4\omega_1^3\omega_2^2)\frac{v_3}{36\omega_3^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (-32\omega_6^2\omega_{13}^2 - 24\omega_6\omega_{13}^2\omega_9 - 32\omega_6^2\omega_{13}c_s^2\omega_9 + 28\omega_{13}^2 v_1^2\omega_9^2 + 104\omega_6^2\omega_{13}v_1^2\omega_9^2 + 16\omega_6^2 c_s^2\omega_9^3 + 24\omega_6^2\omega_{13}\omega_9 - 16\omega_6^2 c_s^2\omega_9^2 - 43\omega_6^2\omega_{13}v_1^2\omega_9^3 + 80\omega_6^2\omega_{13}^2 v_1^2 - 44\omega_6\omega_{13}^2 c_s^2\omega_9^2 + 64\omega_6\omega_{13}^2 v_1^2\omega_9 + 32\omega_6\omega_{13}^2 c_s^2\omega_9 - 68\omega_6\omega_{13}^2 v_1^2\omega_9^2 - 16\omega_6^2 v_1^2\omega_9^2 - 25\omega_6^2\omega_{13}c_s^2\omega_9^3 - 40\omega_6^2\omega_{13}\omega_9^2 - 12\omega_{13}^2\omega_9^2 - 8\omega_6^2\omega_9^3 + 56\omega_6^2\omega_{13}c_s^2\omega_9^2 + 16\omega_6^2 v_1^2\omega_9^3 + 20\omega_{13}^2 c_s^2\omega_9^2 - 64\omega_6^2\omega_{13}v_1^2\omega_9 + 8\omega_6^2\omega_9^2 + 28\omega_6\omega_{13}^2\omega_9^2 + 17\omega_6^2\omega_{13}\omega_9^3 - 20\omega_{13}c_s^2\omega_9^3 - 48\omega_6\omega_{13}v_1^2\omega_9^2 + 48\omega_6^2\omega_{13}^2 c_s^2 + 12\omega_{13}\omega_9^3 + 16\omega_6\omega_{13}\omega_9^2 - 120\omega_6^2\omega_{13}^2 v_1^2\omega_9 + 68\omega_6\omega_{13}v_1^2\omega_9^3 + 25\omega_6^2\omega_{13}^2 c_s^2\omega_9^2 - 16\omega_6 v_1^2\omega_9^3 - 28\omega_6\omega_{13}\omega_9^3 + 8\omega_6\omega_9^3 - 17\omega_6^2\omega_{13}^2\omega_9^2 + 48\omega_6^2\omega_{13}^2\omega_9 + 43\omega_6^2\omega_{13}^2 v_1^2\omega_9^2 - 16\omega_6 c_s^2\omega_9^3 + 44\omega_6\omega_{13}c_s^2\omega_9^3 - 72\omega_6^2\omega_{13}^2 c_s^2\omega_9 - 28\omega_{13}v_1^2\omega_9^3 - 16\omega_6\omega_{13}c_s^2\omega_9^2)\frac{\rho v_1 v_3}{4\omega_6^2\omega_{13}^2\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (27\omega_3\omega_1\omega_2^3 v_3^2 - 54\omega_3 c_s^2\omega_1\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 - 12\omega_3\omega_1^2 v_1^2\omega_2 + 27c_s^2\omega_1^3\omega_2^2 + 5\omega_3\omega_1^3\omega_2^2 v_3^2 + 84\omega_3 v_1^2\omega_2^3 - 51\omega_3\omega_1^2\omega_2^2 + 27\omega_3 c_s^2\omega_1\omega_2^3 - 6\omega_1^2\omega_2^2 v_3^2 - 12\omega_1\omega_2^3 + 84\omega_3 c_s^2\omega_1^3 - 18c_s^2\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2\omega_2 - 12\omega_3 c_s^2\omega_2^3 + 6\omega_3\omega_1\omega_2^2 v_3^2 - 6\omega_1^3\omega_2 v_3^2 - 9\omega_1^2\omega_2^3 v_3^2 - 18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 v_3^2 - 5\omega_3\omega_1^3\omega_2^2 + 12\omega_3\omega_1^3 v_3^2 + 132\omega_3\omega_1^2 v_1^2\omega_2^2 + 48\omega_3\omega_1^3 v_1^2 + 9\omega_1^3\omega_2^2 v_3^2 + 36c_s^2\omega_1\omega_2^3 - 18\omega_3 c_s^2\omega_1^2\omega_2 - 9\omega_3\omega_1^2\omega_2^2 v_3^2 - 66\omega_3\omega_1 v_1^2\omega_2^3 - 9\omega_1^3\omega_2^2 + 12\omega_1\omega_2^3 v_3^2 - 120\omega_3\omega_1 v_1^2\omega_2^2 - 66\omega_3\omega_1^3 v_1^2\omega_2 - 24\omega_3\omega_2^3 v_3^2 + 15\omega_3 c_s^2\omega_1^3\omega_2^2 - 12\omega_3\omega_2^3 - 18\omega_3\omega_1^3\omega_2 v_3^2 - 15\omega_3 c_s^2\omega_1^2\omega_2^3 + 42\omega_3\omega_1\omega_2^2 - 5\omega_3\omega_1^2\omega_2^3 v_3^2 - 108\omega_3 c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 + 9\omega_1^2\omega_2^3 - 36\omega_3\omega_1^3 + 3\omega_3\omega_1\omega_2^3 + 81\omega_3 c_s^2\omega_1^2\omega_2^2 + 6\omega_1^2\omega_2^2)\frac{\rho v_1 v_3}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}^3_x\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = (36v_1^2 - 4\omega^3 v_1^2 + 36c_s^2\omega + 54c_s^2\omega v_1^2 + 26\omega^2 v_1^2 - 36c_s^2 v_1^2 - 12c_s^2\omega^2 + 36c_s^4 + 54\omega v_1^4 - 26\omega^2 v_1^4 + 12c_s^2\omega^3 v_1^2 - 54\omega v_1^2 - 54c_s^4\omega - 24c_s^2 + 4\omega^3 v_1^4 + 20c_s^4\omega^2 - 36v_1^4 - c_s^4\omega^3 - 42c_s^2\omega^2 v_1^2)\frac{\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = (36\omega_6^3\omega_{13}v_1^2\omega_9 - 24\omega_6\omega_{13}v_1^4\omega_9^3 + 6\omega_6^2\omega_{13}^2 c_s^4\omega_9^2 + 6\omega_6^3\omega_{13}c_s^2\omega_9^2 - 12\omega_6^3\omega_{13}^2 c_s^4\omega_9 + 12\omega_6^3\omega_{13}^2 c_s^2 v_1^2\omega_9^3 + 6\omega_6\omega_{13}^2 c_s^2\omega_9^3 + 19\omega_6^3\omega_{13}^2 v_1^4\omega_9^2 + 24\omega_6^2\omega_{13}v_1^2\omega_9^2 + 13\omega_6^2\omega_{13}^2 c_s^4\omega_9^3 - 6\omega_6^3\omega_{13}c_s^2\omega_9^3 + 4\omega_6^3\omega_{13}^2 v_1^4\omega_9^3 - 48\omega_6^2\omega_{13}v_1^2\omega_9^3 + 60\omega_6^3\omega_{13}^2 c_s^2 v_1^2\omega_9^2 - 12\omega_6^3\omega_{13}^2 c_s^2 + 252\omega_6^3\omega_{13}^2 c_s^2 v_1^2 - 306\omega_6^3\omega_{13}^2 c_s^2 v_1^2\omega_9 - \omega_6^3\omega_{13}^2 c_s^4\omega_9^3 + 18\omega_6^2\omega_{13}c_s^2\omega_9^3 + 72\omega_6^3\omega_{13}^2 v_1^4 + 30\omega_6^2\omega_{13}c_s^2 v_1^2\omega_9^3 - 12\omega_6^3 v_1^4\omega_9^2 - 18\omega_6^2\omega_{13}^2 v_1^4\omega_9^3 + 27\omega_6^3\omega_{13}v_1^2\omega_9^3 - 48\omega_{13}^2 c_s^2 v_1^2\omega_9^3 + \omega_6^3\omega_{13}^2 c_s^4\omega_9^2 - 12\omega_6^2\omega_{13}c_s^2\omega_9^2 + 12\omega_6^2 v_1^2\omega_9^3 - 12\omega_6\omega_{13}^2 v_1^2\omega_9^3 - 12\omega_6\omega_{13}c_s^2 v_1^2\omega_9^3 - 90\omega_6^3\omega_{13}^2 v_1^4\omega_9 + 12\omega_6^2\omega_{13}^2 v_1^4\omega_9^2 - 60\omega_6^3\omega_{13}v_1^2\omega_9^2 + 12\omega_6\omega_{13}c_s^4\omega_9^3 + 12\omega_6^3 v_1^4\omega_9^3 - 12\omega_6^2\omega_{13}c_s^2 v_1^2\omega_9^2 - 12\omega_6^2\omega_{13}^2 c_s^4\omega_9 + 6\omega_6^3\omega_{13}c_s^4\omega_9^3 - 5\omega_6^2\omega_{13}^2 c_s^2\omega_9^3 - 72\omega_6^3\omega_{13}^2 v_1^2 - 21\omega_6^3\omega_{13}c_s^2 v_1^2\omega_9^3 + 48\omega_6^2\omega_{13}v_1^4\omega_9^3 - 4\omega_6^3\omega_{13}^2 v_1^2\omega_9^3 - 108\omega_6^2\omega_{13}^2 c_s^2 v_1^2\omega_9 + 12\omega_6^3 c_s^2 v_1^2\omega_9^3 - 36\omega_6^3\omega_{13}v_1^4\omega_9 + 54\omega_6^3\omega_{13}c_s^2 v_1^2\omega_9^2 + 24\omega_6\omega_{13}v_1^2\omega_9^3 - 6\omega_6^3\omega_{13}c_s^4\omega_9^2 - 6\omega_6^2\omega_{13}^2 c_s^2\omega_9^2 + 12\omega_6^3\omega_{13}^2 c_s^2\omega_9 - 12\omega_6^3 c_s^2 v_1^2\omega_9^2 - 24\omega_6\omega_{13}^2 c_s^4\omega_9^3 - 24\omega_6^2\omega_{13}v_1^4\omega_9^2 - 19\omega_6^3\omega_{13}^2 v_1^2\omega_9^2 + 12\omega_6^2\omega_{13}c_s^4\omega_9^2 - 12\omega_6^2 v_1^4\omega_9^3 - \omega_6^3\omega_{13}^2 c_s^2\omega_9^2 + 12\omega_6\omega_{13}^2 v_1^4\omega_9^3 + 90\omega_6^3\omega_{13}^2 v_1^2\omega_9 - 81\omega_6^2\omega_{13}^2 c_s^2 v_1^2\omega_9^3 - 36\omega_6^3\omega_{13}c_s^2 v_1^2\omega_9 + 60\omega_6^3\omega_{13}v_1^4\omega_9^2 - 12\omega_6^2\omega_{13}^2 v_1^2\omega_9^2 - 48\omega_6\omega_{13}^2 c_s^2 v_1^2\omega_9^2 - 12\omega_6^3 v_1^2\omega_9^3 - 12\omega_6\omega_{13}c_s^2\omega_9^3 + 12\omega_6^2\omega_{13}^2 c_s^2\omega_9 + 162\omega_6^2\omega_{13}^2 c_s^2 v_1^2\omega_9^2 + 12\omega_{13}^2 c_s^4\omega_9^2 + 12\omega_6^3\omega_{13}^2 c_s^4 - 18\omega_6^2\omega_{13}c_s^4\omega_9^3 - 12\omega_6^2 c_s^2 v_1^2\omega_9^3 + 12\omega_6^3 v_1^2\omega_9^2 - 27\omega_6^3\omega_{13}v_1^4\omega_9^3 + 102\omega_6\omega_{13}^2 c_s^2 v_1^2\omega_9^3 + 18\omega_6^2\omega_{13}^2 v_1^2\omega_9^3)\frac{\rho}{12\omega_6^3\omega_{13}^2\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_3}$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = (36\omega_6^3\omega_{13}v_1^2\omega_9 + 6\omega_6^2\omega_{13}^2c_s^4\omega_9^2 + 6\omega_6^3\omega_{13}c_s^2\omega_9^2 - 12\omega_6^3\omega_{13}^2c_s^4\omega_9 + 12\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_9^3 + 6\omega_6\omega_{13}^2c_s^2\omega_9^3 + 19\omega_6^3\omega_{13}^2v_1^4\omega_9^2 + 13\omega_6^2\omega_{13}^2c_s^4\omega_9^3 - 6\omega_6^3\omega_{13}c_s^2\omega_9^3 + 4\omega_6^3\omega_{13}^2v_1^4\omega_9^3 - 36\omega_6^2\omega_{13}v_1^2\omega_9^3 + 60\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_9^2 - 12\omega_6^3\omega_{13}^2c_s^2 + 252\omega_6^3\omega_{13}^2c_s^2v_1^2 - 306\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_9 - \omega_6^3\omega_{13}^2c_s^4\omega_9^3 + 18\omega_6^2\omega_{13}c_s^2\omega_9^3 + 72\omega_6^3\omega_{13}^2v_1^4 + 54\omega_6^2\omega_{13}c_s^2v_1^2\omega_9^3 - 36\omega_6^3v_1^4\omega_9^2 - 6\omega_6^2\omega_{13}^2v_1^4\omega_9^3 + 39\omega_6^3\omega_{13}v_1^2\omega_9^3 + \omega_6^3\omega_{13}^2c_s^4\omega_9^2 - 12\omega_6^2\omega_{13}c_s^2\omega_9^2 + 36\omega_6^2v_1^2\omega_9^3 + 36\omega_6\omega_{13}c_s^2v_1^2\omega_9^3 - 90\omega_6^3\omega_{13}^2v_1^4\omega_9 - 72\omega_6^3\omega_{13}v_1^2\omega_9^2 + 12\omega_6\omega_{13}c_s^4\omega_9^3 + 36\omega_6^3v_1^4\omega_9^3 + 36\omega_6^2\omega_{13}c_s^2v_1^2\omega_9^2 - 12\omega_6^2\omega_{13}^2c_s^4\omega_9 + 6\omega_6^3\omega_{13}c_s^4\omega_9^3 - 5\omega_6^2\omega_{13}^2c_s^2\omega_9^3 - 72\omega_6^3\omega_{13}^2v_1^2 - 99\omega_6^3\omega_{13}c_s^2v_1^2\omega_9^3 + 36\omega_6^2\omega_{13}v_1^4\omega_9^3 - 4\omega_6^3\omega_{13}^2v_1^2\omega_9^3 - 36\omega_6^2\omega_{13}^2c_s^2v_1^2\omega_9 + 108\omega_6^3c_s^2v_1^2\omega_9^3 - 36\omega_6^3\omega_{13}v_1^4\omega_9 + 198\omega_6^3\omega_{13}c_s^2v_1^2\omega_9^2 - 6\omega_6^3\omega_{13}c_s^4\omega_9^2 - 6\omega_6^2\omega_{13}^2c_s^2\omega_9^2 + 12\omega_6^3\omega_{13}^2c_s^2\omega_9 - 108\omega_6^3c_s^2v_1^2\omega_9^2 - 24\omega_6\omega_{13}^2c_s^4\omega_9^3 - 19\omega_6^3\omega_{13}^2v_1^2\omega_9^2 + 12\omega_6^2\omega_{13}c_s^4\omega_9^2 - 36\omega_6^2v_1^4\omega_9^3 - \omega_6^3\omega_{13}^2c_s^2\omega_9^2 + 90\omega_6^3\omega_{13}^2v_1^2\omega_9 - 3\omega_6^2\omega_{13}^2c_s^2v_1^2\omega_9^3 - 108\omega_6^3\omega_{13}c_s^2v_1^2\omega_9 + 72\omega_6^3\omega_{13}v_1^4\omega_9^2 - 36\omega_6^3v_1^2\omega_9^3 - 12\omega_6\omega_{13}c_s^2\omega_9^3 + 12\omega_6^2\omega_{13}^2c_s^2\omega_9 + 18\omega_6^2\omega_{13}^2c_s^2v_1^2\omega_9^2 + 12\omega_{13}^2c_s^4\omega_9^3 + 12\omega_6^3\omega_{13}^2c_s^4 - 18\omega_6^2\omega_{13}c_s^4\omega_9^3 - 108\omega_6^2c_s^2v_1^2\omega_9^3 + 36\omega_6^3v_1^2\omega_9^2 - 39\omega_6^3\omega_{13}v_1^4\omega_9^3 - 18\omega_6\omega_{13}^2c_s^2v_1^2\omega_9^3 + 6\omega_6^2\omega_{13}^2v_1^2\omega_9^3)\frac{\rho}{12\omega_6^3\omega_{13}^2\omega_9^3}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_3}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = (-36\omega_4c_s^2v_1^2\omega_2^2\omega_{12}^2 + 12\omega_4c_s^2\omega_2^3\omega_{12}^2 + 72v_1^4\omega_2^3\omega_{12}^2 + 108\omega_4^3c_s^2v_1^2\omega_2^3 - 18\omega_4^3c_s^2v_1^2\omega_2\omega_{12}^2 - 4\omega_4^3v_1^2\omega_2^3\omega_{12}^2 - 24\omega_4^3c_s^4\omega_2\omega_{12}^2 - 72\omega_4^2v_1^2\omega_2^3\omega_{12} - 6\omega_4^3v_1^4\omega_2^2\omega_{12}^2 - 12\omega_4c_s^4\omega_2^2\omega_{12}^2 + 198\omega_4^2c_s^2v_1^2\omega_2^3\omega_{12} - 36\omega_4^3v_1^2\omega_2^2\omega_{12} + 19\omega_4^2v_1^4\omega_2^3\omega_{12}^2 - 108\omega_4^3c_s^2v_1^2\omega_2^2 - 108\omega_4c_s^2v_1^2\omega_2^3\omega_{12} + 18\omega_4^2c_s^2v_1^2\omega_2^2\omega_{12}^2 + 252c_s^2v_1^2\omega_2^3\omega_{12}^2 - 12\omega_4^3c_s^2\omega_2\omega_{12} - 39\omega_4^3v_1^4\omega_2^3\omega_{12} - 12\omega_4c_s^4\omega_2^3\omega_{12}^2 + 36\omega_4^2c_s^2v_1^2\omega_2\omega_{12} + 12\omega_4^3c_s^4\omega_{12}^2 - 72v_1^2\omega_2^3\omega_{12}^2 + 6\omega_4^3c_s^2\omega_2\omega_{12}^2 + 4\omega_4^3v_1^4\omega_2^3\omega_{12}^2 + 72\omega_4^2v_1^4\omega_2^3\omega_{12} + 6\omega_4^3v_1^2\omega_2^2\omega_{12}^2 - 36\omega_4^3v_1^4\omega_2^2 + 12\omega_4c_s^2\omega_2^2\omega_{12}^2 - 306\omega_4c_s^2v_1^2\omega_2^3\omega_{12}^2 + 36\omega_4^2v_1^2\omega_2^3 - 108\omega_4^2c_s^2v_1^2\omega_2^3 + 36\omega_4^3v_1^4\omega_2^2\omega_{12} - 19\omega_4^2v_1^2\omega_2^3\omega_{12}^2 + 60\omega_4^2c_s^2v_1^2\omega_2^3\omega_{12}^2 + 36\omega_4^3v_1^4\omega_2^3 + 39\omega_4^3v_1^2\omega_2^3\omega_{12} + 36\omega_4^3c_s^2v_1^2\omega_2\omega_{12} + 12\omega_4^3c_s^4\omega_2\omega_{12} + 6\omega_4^2c_s^4\omega_2^2\omega_{12}^2 - 6\omega_4^3c_s^2\omega_2^3\omega_{12} + 36\omega_4v_1^2\omega_2^3\omega_{12} - \omega_4^2c_s^2\omega_2^3\omega_{12}^2 - 18\omega_4^3c_s^4\omega_2^2\omega_{12} + 54\omega_4^3c_s^2v_1^2\omega_2^2\omega_{12} - 5\omega_4^3c_s^2\omega_2^2\omega_{12}^2 - 6\omega_4^2c_s^4\omega_2^3\omega_{12} - 12c_s^2\omega_2^3\omega_{12}^2 + 12\omega_4^3c_s^2v_1^2\omega_2^3\omega_{12}^2 - \omega_4^3c_s^4\omega_2^3\omega_{12}^2 - 12\omega_4^2c_s^2\omega_2^2\omega_{12} - 90\omega_4v_1^4\omega_2^3\omega_{12}^2 - 36\omega_4^2v_1^4\omega_2^3 - 99\omega_4^3c_s^2v_1^2\omega_2^3\omega_{12} - 6\omega_4^2c_s^2\omega_2^2\omega_{12}^2 + 6\omega_4^3c_s^4\omega_2^3\omega_{12} - 36\omega_4v_1^4\omega_2^3\omega_{12} - 36\omega_4^3v_1^2\omega_2^3 + \omega_4^2c_s^4\omega_2^3\omega_{12}^2 + 18\omega_4^3c_s^2\omega_2^2\omega_{12} + 13\omega_4^3c_s^4\omega_2^2\omega_{12}^2 + 6\omega_4^2c_s^2\omega_2^3\omega_{12} - 3\omega_4^3c_s^2v_1^2\omega_2^2\omega_{12}^2 + 12c_s^4\omega_2^3\omega_{12}^2 + 12\omega_4^2c_s^4\omega_2^2\omega_{12} + 36\omega_4^3v_1^2\omega_2^2 + 90\omega_4v_1^2\omega_2^3\omega_{12}^2)\frac{\rho}{12\omega_4^3\omega_2^3\omega_{12}^2}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_3} = (-24\omega_3^2\omega_4^2\omega_1^3v_3^2 + 40\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 - 96\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2v_3^2 + 72\omega_3^2\omega_4c_s^4\omega_1\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 492\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 + 180\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^2 + 36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 - 2\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 + 18\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 12\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 96\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 + 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 + 576\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3v_3^2 + 648\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 - 60\omega_3\omega_4^2\omega_1^2v_1^4\omega_2^2 + 432\omega_3^2\omega_4^2c_s^2v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 + 117\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^3 - 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 + 174\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 - 144\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 - 117\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4 + 48\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2v_3^2 + 144\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2v_3^2 - 36\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 + 216\omega_3\omega_4^2\omega_1^2v_1^4\omega_2^3 - 108\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 6\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^2 - 36\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 86\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 36\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 - 288\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3 + 468\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 24\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 - 72\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 36\omega_4^2\omega_1^3v_1^2\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 36\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 108\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 + 162\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 + 16\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 144\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2v_3^2 + 204\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 72\omega_3^2\omega_4\omega_1v_1^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2v_1^2 + 20\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 - 18\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 24\omega_3\omega_4^2\omega_1v_1^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2 - 48\omega_3^2\omega_4^2v_1^2\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 + 64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 162\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 + 40\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 54\omega_4^2\omega_1^3v_1^2\omega_2^3 - 108\omega_3^2\omega_1^2v_1^4\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 108\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 - 540\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 12\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 + 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 + 264\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2 + 86\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 432\omega_3^2\omega_4^2v_1^2\omega_2^3v_3^2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 - 72\omega_4^2\omega_1^2v_1^4\omega_2^3 + 24\omega_3\omega_4^2\omega_1^3v_1^2\omega_2 - 54\omega_3^2\omega_1^3v_1^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^2\omega_2^3v_3^2 - 117\omega_3\omega_4^2\omega_1^3v_1^4\omega_2^3 + 80\omega_3^2\omega_4^2c_s^4\omega_2^3 + 48\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 117\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^3 + 240\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2v_3^2 + 72\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 + 108\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 + 72\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 - 216\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 + 288\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^2 + 38\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 - 172\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 297\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 + 72\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 + 108\omega_3\omega_4^2\omega_1^3v_1^4\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 + 16\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 180\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 36\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^2 + 16\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 60\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^2 - 108\omega_3\omega_4\omega_1^3v_1^2\omega_2^3 + 12\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 + 18\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 264\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2v_3^2 + 168\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 + 48\omega_3^2\omega_4^2\omega_2^3v_3^2 + 336\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^2 + 324\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 + 108\omega_3^2\omega_1^2v_1^2\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 + 54\omega_4^2\omega_1^3v_1^4\omega_2^3 - 492\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 + 48\omega_3\omega_4^2c_s^4\omega_1^2\omega_2v_3^2 - 216\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2v_3^2 - 6\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^2 + 288\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 + 48\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 54\omega_3^2\omega_1^3v_1^4\omega_2^3 + 72\omega_4^2\omega_1^2v_1^2\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 24\omega_3\omega_4^2\omega_1^3v_1^4\omega_2 + 24\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 - 72\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 32\omega_3^2\omega_4^2c_s^4\omega_1^3 + 96\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2 - 36\omega_4^2\omega_1^3v_1^4\omega_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 108\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 - 852\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 + 72\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 - 297\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 - 32\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 - 324\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 24\omega_3\omega_4^2\omega_1v_1^4\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2 - 18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 + 192\omega_3^2\omega_4^2v_1^4\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}^2_x\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y\mathrm{D}_z\rho} = (-\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^3\omega_{12} + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 9\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} - 3\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + \omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 3\omega_6^2\omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12}^2 - 3\omega_6\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 6\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 - 3\omega_6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5\omega_9\omega_{12}^2 + 6\omega_6^2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12} + \omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2v_1^2\omega_5\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}\omega_{14}v_1^2\omega_5\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6\omega_{13}^2\omega_{14}v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6\omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12}^2 + \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 - \omega_6\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12} + 3\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} + \omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2 - \omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - \omega_6^2\omega_{13}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} + \omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_9\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12} + \omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12} + 3\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_9^3\omega_{12} - \omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6\omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2 - 6\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3 + 3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - \omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^3\omega_{12} +$$

$$2\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12} + \omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12}^2 - 3\omega_6^2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$\omega_6^2\omega_{13}^2\omega_8v_1^2\omega_5\omega_9^3\omega_{12} - \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} +$$
$$\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2c_s^2\omega_9^2\omega_{12}^2 + \omega_6\omega_{13}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} + \omega_6^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$2\omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12} - 3\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} + 6\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 3\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 -$$
$$\omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^3 - 3\omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12} - \omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12} + \omega_6\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12} -$$
$$3\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6^2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 - 3\omega_6^2\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 6\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_5\omega_9^3\omega_{12}^2 - 3\omega_6c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12}^2 -$$
$$3\omega_6^2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - \omega_6\omega_{13}\omega_{14}\omega_8v_1^2\omega_5\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 -$$
$$3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} - \omega_6^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - \omega_6^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12} + \omega_6\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}^2c_s^2\omega_5\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 3\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$\omega_6^2\omega_{13}^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2 - 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12}^2 + 6\omega_6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 3\omega_6^2\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^3\omega_{12} - \omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 -$$
$$\omega_6^2\omega_{13}\omega_8v_1^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6\omega_{13}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12})\frac{v_1v_2v_3}{\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (6\omega_1^2v_2^2\omega_2^2 + 12\omega_1v_1^2\omega_2^2 - 12\omega_1\omega_2^2 - 72c_s^2\omega_1^2\omega_2 + 6\omega_1^2\omega_2^2v_3^2 + 6\omega_1\omega_2^3 + 2v_2^2\omega_2^3 + 36c_s^2\omega_1^2\omega_2^2 + 4\omega_1^3v_1^2 - 6\omega_1^2v_2^2\omega_2 - 3\omega_1^3\omega_2v_3^2 +$$
$$2\omega_2^3v_3^2 - 18c_s^2\omega_1^3\omega_2 - 18c_s^2\omega_1\omega_2^3 + 24\omega_1^2\omega_2 + 36c_s^2\omega_1\omega_2^2 - 3\omega_1\omega_2^3v_3^2 - 12\omega_1^2v_1^2\omega_2 + 4\omega_1^3v_3^2 + 4\omega_1^3v_2^2 - 12\omega_1^3 + 6\omega_1^3\omega_2 - 6\omega_1^2\omega_2v_3^2 - 3\omega_1^3v_2^2\omega_2 +$$
$$36c_s^2\omega_1^3 - 3\omega_1v_2^2\omega_2^3 - 4v_1^2\omega_2^3 - 12\omega_1^2\omega_2^2)\frac{v_1v_2v_3}{6\omega_1^3\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (-3\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^3\omega_{12} + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} -$$
$$3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 6\omega_6\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 3\omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} -$$
$$\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}^2\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12} -$$
$$\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12}^2 - \omega_6\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 3\omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 -$$
$$\omega_6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9 - 3\omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12} +$$
$$\omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 3\omega_6^2\omega_{13}^2\omega_1v_5\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 -$$
$$\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6^2\omega_{13}^2\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^2\omega_{13}^2\omega_{14}v_1^2\omega_5\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 3\omega_6\omega_{13}^2\omega_{14}v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$6\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12}^2 + \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 - \omega_6\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^2\omega_{13}^2\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12} + \omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} +$$
$$3\omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5\omega_9^3\omega_{12}^2 + 6\omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12}^2 - 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2 - \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 3\omega_6^2\omega_{13}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$3\omega_6\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} + 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 3\omega_6^2\omega_{13}^2\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$\omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^3\omega_{12} + \omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12} + \omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_9^3\omega_{12} -$$
$$\omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}^2c_s^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$3\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + \omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 3\omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^3\omega_{12} +$$
$$6\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12} + 3\omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12}^2 - \omega_6^2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$3\omega_6^2\omega_{13}^2\omega_8v_1^2\omega_5\omega_9^3\omega_{12} - \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 3\omega_6\omega_{13}^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6^2\omega_{13}^2\omega_{14}v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} +$$
$$3\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6\omega_{13}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} + \omega_6^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$6\omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12} - \omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} + 2\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + \omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 -$$
$$3\omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^3 - \omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12} - \omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12} + \omega_6\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12} -$$
$$\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_5\omega_9^3\omega_{12}^2 - \omega_6c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12}^2 -$$
$$\omega_6^2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 3\omega_6\omega_{13}\omega_{14}\omega_8v_1^2\omega_5\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 -$$
$$\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} - 3\omega_6^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12} + \omega_6\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2c_s^2\omega_5\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - \omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$3\omega_6^2\omega_{13}^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2 - 9\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_6^2\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$\omega_6^2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^3\omega_{12} - 3\omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12} + \omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - \omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^3 -$$
$$3\omega_6^2\omega_{13}^2\omega_8v_1^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 3\omega_6\omega_{13}^2\omega_8v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12})\frac{\rho v_2v_3}{\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (3\omega_3\omega_1^3v_2^2\omega_2^2 + 3\omega_3^2\omega_1^2v_2^2\omega_2^3 - 2\omega_3\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2\omega_4\omega_1^3 + 6\omega_3\omega_1^2\omega_2^3 + \omega_3\omega_4\omega_1v_2^2\omega_2^3 + 4\omega_3^2\omega_4\omega_2^3v_3^2 + 3\omega_3^2\omega_1^2\omega_2^2v_3^2 - 4\omega_3^2\omega_4\omega_1v_2^2\omega_2^2 - 3\omega_4\omega_1^3v_2^2\omega_2^2 - 3\omega_3^2\omega_4\omega_1^3v_2^2\omega_2 - 4\omega_3^2\omega_4\omega_1^2\omega_2v_3^2 + 3\omega_3\omega_1^3v_2^2v_3^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^2 + 6\omega_3\omega_4\omega_1^2\omega_2^3 + 4\omega_3\omega_4\omega_1^3\omega_2 + 6\omega_3^2\omega_1\omega_2^3 + 3\omega_3^2\omega_1^2v_2^2\omega_2^2 - 2\omega_3\omega_4\omega_1^3v_2^2\omega_2 - 4\omega_3^2\omega_4\omega_1\omega_2^2v_3^2 - 3\omega_4\omega_1^3\omega_2^2v_3^2 + 12\omega_3^2\omega_4\omega_1^3v_1^2 - 3\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 - 18\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 18\omega_3^2c_s^2\omega_1^2\omega_2^3 + 3\omega_3^2\omega_1^2\omega_2^2v_3^2 + 6\omega_3^2\omega_4\omega_1\omega_2^3 + 4\omega_3^2\omega_4v_2^2\omega_2^3 + \omega_3\omega_4\omega_1\omega_2^3v_3^2 + 3\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 - 6\omega_3\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2 - 4\omega_3^2\omega_4\omega_2^3 - 12\omega_3^2\omega_4c_s^2\omega_1\omega_2^2 - 3\omega_3^2\omega_4\omega_1\omega_2^2v_3^2 - 6\omega_3\omega_4^2\omega_1\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^2 + 3\omega_3\omega_4\omega_1^3\omega_2^2v_3^2 + 18\omega_3^2c_s^2\omega_1^2\omega_2^2 + 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2 - 6\omega_4\omega_1^2\omega_2^3 + 3\omega_4\omega_1^2v_2^2\omega_2^3 + 28\omega_3^2\omega_4c_s^2\omega_1^3 - 3\omega_3\omega_4\omega_1^2\omega_2^3v_3^2 - 12\omega_3^2\omega_4v_1^2\omega_2^3 - 12\omega_3\omega_4c_s^2\omega_1^3\omega_2 - 18\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - 3\omega_3^2\omega_1\omega_2^3v_3^2 - 3\omega_3^2\omega_1^3v_2^2\omega_2^2 - 3\omega_3\omega_1^2v_2^2\omega_2^3 - 2\omega_3\omega_4\omega_1^3\omega_2v_3^2 - 12\omega_3^2\omega_4\omega_1^2\omega_2^2 - 18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2 - 3\omega_3^2\omega_4\omega_1^3\omega_2v_3^2 - 18\omega_4c_s^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4\omega_1^2v_2^2\omega_2 + 6\omega_3^2\omega_4\omega_1^3\omega_2 - 18\omega_3^2c_s^2\omega_1\omega_2^3 - 3\omega_3^2\omega_1^3\omega_2^2v_3^2 + 6\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 + 18\omega_3c_s^2\omega_1^3\omega_2^2 + 6\omega_3^2\omega_1^3\omega_2^2 - 3\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2^3 - 6\omega_3^2\omega_1^2\omega_2^3 + \omega_3\omega_4\omega_1^2\omega_2^2v_3^2 - 3\omega_3\omega_1^2\omega_2^3v_3^2 + 4\omega_3^2\omega_4\omega_1^3v_3^2 - 3\omega_3^2\omega_1v_2^2\omega_2^3 - 2\omega_3\omega_4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3v_2^2 + 6\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 3\omega_4\omega_1^2\omega_2^2v_3^2 + 18\omega_4c_s^2\omega_1^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 + 18\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 6\omega_3^2\omega_1^2\omega_2^2 + \omega_3\omega_4\omega_1^2v_2^2\omega_2^2 + 20\omega_3^2\omega_4c_s^2\omega_2^3 + 20\omega_3^2\omega_4\omega_1^2\omega_2 + 6\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^2 + 6\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2)\frac{\rho v_2v_3}{6\omega_3^2\omega_4\omega_1^3\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-9\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 + 4\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12} + 2\omega_6\omega_{13}^2\omega_7\omega_8^3\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 15\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12} + 2\omega_6\omega_{13}\omega_7\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^2\omega_{12} + 6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9^3 - 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^2\omega_{12} + 2\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12} + 2\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 3\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8v_1^2\omega_5^3\omega_9^3\omega_{12} - 2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} + 3\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} - 8\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + 5\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 - 3\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^3 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12} + 2\omega_6\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 13\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 12\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 + 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 4\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 - 5\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 3\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12} - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 6\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2 + 4\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 + 8\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 6\omega_6^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} + \omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 3\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 4\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12} + 9\omega_6^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12} - 8\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 11\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_7c_s^2\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 15\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8v_1^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12} + 9\omega_6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - \omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6\omega_{13}^2\omega_7\omega_8^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} - 2\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 3\omega_6^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 6\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} - 8\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12} + 4\omega_6^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - 6\omega_6^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 4\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12})\frac{\rho v_1v_3}{2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-24\omega_3\omega_4^2\omega_1^3\omega_2 v_2^3 + 48\omega_3^2\omega_4^2\omega_1^3 v_3^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 + 144\omega_3\omega_4^2\omega_1^2\omega_2^3 v_3^2 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2 + 180\omega_3\omega_4\omega_1^2 v_1^2\omega_2^3 +$$
$$36\omega_3\omega_4^2\omega_1^3 v_1^2\omega_2^2 + 324\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^3 + 180\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2 v_1^2\omega_2^2 + 63\omega_3^2\omega_4\omega_1^3\omega_2^3 v_3^2 - 108\omega_4^2\omega_1^3\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3 v_2^2 + 324\omega_4^2 c_s^2\omega_1^3\omega_2^3 -$$
$$120\omega_3^2\omega_4^2 c_s^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 - 144\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^2 - 144\omega_3\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3\omega_2 v_3^2 - 216\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2 - 216\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 72\omega_4^2\omega_1^3\omega_2^2 -$$
$$360\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2 - 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 v_3^2 - 60\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2 v_1^2\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 + 336\omega_3^2\omega_4^2 c_s^2\omega_1^3 + 216\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2^2 - 72\omega_4^2\omega_1^2\omega_2^3 v_3^2 +$$
$$108\omega_3^2\omega_4 c_s^2\omega_1\omega_2^3 - 432\omega_4^2 c_s^2\omega_1^2\omega_2^3 - 36\omega_4^2\omega_1^3 v_1^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^2 + 60\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2 - 36\omega_3^2\omega_4\omega_1^3\omega_2^2 v_3^2 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 -$$
$$60\omega_3\omega_4^2\omega_1^2\omega_2^2 v_3^2 + 108\omega_3^2\omega_4^2\omega_1^3\omega_2^3 v_3^2 - 189\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4\omega_1\omega_2^3 + 12\omega_3\omega_4^2\omega_1 v_1^2\omega_2^3 + 48\omega_3^2\omega_4^2 v_1^2\omega_2^3 - 72\omega_3\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^2 -$$
$$144\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2 + 54\omega_4^2\omega_1^3 v_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^3 + 72\omega_3^2\omega_4\omega_1\omega_2^3 v_3^2 + 108\omega_3\omega_4\omega_1^3\omega_2^3 + 324\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 +$$
$$36\omega_3\omega_4\omega_1^3\omega_2^2 v_3^2 - 24\omega_3\omega_4^2\omega_1^3 v_1^2\omega_2 + 54\omega_3^2\omega_1^3 v_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^3 v_2^2\omega_2 + 24\omega_3^2\omega_4^2\omega_1^2\omega_2 v_3^2 + 216\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^2 + 72\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 -$$
$$36\omega_3\omega_4\omega_1^2\omega_2^3 v_3^2 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3\omega_4^2\omega_1^2 v_1^2\omega_2^3 + 72\omega_4^2\omega_2^2 v_2^2\omega_2^3 + 432\omega_3\omega_4 c_s^2\omega_1^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3 v_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2\omega_4\omega_1^2\omega_2^2 -$$
$$108\omega_3^2\omega_4^2\omega_1 v_2^2\omega_2^3 - 180\omega_3^2\omega_4\omega_1^2\omega_2^3 v_3^2 - 36\omega_3^2\omega_4\omega_1^3 v_1^2\omega_2^2 - 432\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 v_3^2 - 36\omega_4^2\omega_1^3\omega_2^2 v_3^2 + 144\omega_3^2\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 +$$
$$12\omega_3\omega_4^2\omega_1^2 v_1^2\omega_2^2 - 108\omega_3\omega_4\omega_1^3 v_1^2\omega_2^3 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 - 63\omega_3^2\omega_4^2\omega_1^3\omega_2^3 v_3^2 - 96\omega_3^2\omega_4^2\omega_2^3 v_3^2 - 24\omega_3\omega_4^2\omega_1\omega_2^3 v_3^2 + 72\omega_3^2\omega_4\omega_1^3\omega_2^2 + 48\omega_3\omega_4^2\omega_1^2\omega_2^2 -$$
$$108\omega_3^2\omega_1^2 v_1^2\omega_2^3 - 324\omega_3\omega_4 c_s^2\omega_1^3\omega_2^2 - 216\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^2 + 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 v_3^2 + 180\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^3 - 72\omega_4^2\omega_1^2 v_1^2\omega_2^3 + 48\omega_3\omega_4^2\omega_1^3\omega_2 - 144\omega_3^2\omega_4^2\omega_1^3 +$$
$$216\omega_3\omega_4 c_s^2\omega_1^3\omega_2^2 - 54\omega_3^2\omega_1^3\omega_2^3 v_3^2 + 72\omega_3\omega_4^2\omega_1^3\omega_2^2 v_3^2 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3\omega_4^2 c_s^2\omega_1\omega_2^3 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4\omega_1 v_1^2\omega_2^3 + 54\omega_4^2\omega_1^3\omega_2^2 v_3^2 +$$
$$108\omega_3^2\omega_4^2\omega_1\omega_2^3 v_3^2 - 72\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2\omega_2^2 v_3^2 - 48\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2 + 48\omega_3^2\omega_4^2\omega_1^2 v_1^2 + 189\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^3)\frac{\rho v_1 v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 4\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$6\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_9^3\omega_{12}^2 - 6\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3 - 3\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} + 3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 +$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12} + 11\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 4\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12} - 2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9\omega_{12}^2 + 3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 5\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$3\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12} + 2\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$2\omega_6^2\omega_{13}^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 11\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^3 - 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_7\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12} + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^3\omega_{12}^2 -$$
$$4\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 9\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 8\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12} +$$
$$4\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 13\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 4\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12} +$$
$$2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^3\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$6\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 4\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 -$$
$$2\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 4\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12} - 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^3\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^3\omega_{12} - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 5\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6^3\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12} -$$
$$2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + 8\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2 v_1^2\omega_5\omega_9^3\omega_{12} - 2\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 -$$
$$2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^3\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12} - 4\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 2\omega_6^3\omega_{13}\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 4\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} +$$
$$2\omega_6^3\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 4\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^3\omega_{13}\omega_7\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} -$$
$$4\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6\omega_{13}^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$4\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^3 - \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^3\omega_{12}^2 +$$
$$6\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_8 v_1^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5\omega_9^3\omega_{12} + 12\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 +$$
$$8\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 6\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_9^3\omega_{12} - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2 -$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_8^2 v_1^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 + 15\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 6\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} - 9\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}\omega_7\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}\omega_7 c_s^2\omega_8^2\omega_5^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2 v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 8\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$4\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 4\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2)\frac{\rho v_1 v_2}{2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (144\omega_3^2\omega_4^2\omega_1^3v_2^3 + 12\omega_3\omega_4^2\omega_1\omega_2^3 + 108\omega_3^2\omega_1^2v_2^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 + 180\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 36\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^2 +$
$324\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 180\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 - 72\omega_4^2\omega_1^2v_2^2\omega_2^3 - 108\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^2 + 324\omega_4^2c_s^2\omega_1^3\omega_2^3 - 120\omega_3^2\omega_4^2c_s^2\omega_2^3 +$
$96\omega_3^2\omega_4^2\omega_1^2\omega_2 - 144\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 144\omega_3\omega_4\omega_1^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 216\omega_4^2c_s^2\omega_1^3\omega_2^2 + 72\omega_4^2\omega_1^3\omega_2^2 - 360\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 +$
$72\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 - 60\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 + 336\omega_3^2\omega_4^2c_s^2\omega_1^3 - 36\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 108\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 63\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^3 -$
$432\omega_4^2c_s^2\omega_1^2\omega_2^3 - 36\omega_4^2\omega_1^3v_1^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 + 60\omega_3^2\omega_4^2c_s^2\omega_2^3\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 189\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4\omega_1\omega_2^3 +$
$12\omega_3\omega_4^2\omega_1v_1^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 144\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^3 - 72\omega_3\omega_4\omega_1^3\omega_2^2 + 216\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 - 144\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 54\omega_4^2\omega_1^3v_1^2\omega_2^3 -$
$36\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 + 108\omega_3\omega_4\omega_1^3\omega_2^3 - 60\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^2 + 324\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 -$
$24\omega_3\omega_4^2\omega_1^3v_1^2\omega_2 + 54\omega_3^2\omega_1^3v_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 216\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 216\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2 + 72\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 -$
$36\omega_4^2\omega_1^3v_2^2\omega_2^2 - 24\omega_3\omega_4^2\omega_1v_2^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^3 - 96\omega_3^2\omega_4^2v_2^2\omega_2^3 + 432\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 -$
$72\omega_3^2\omega_4\omega_1^2\omega_2^2 + 108\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 54\omega_4^2\omega_1^3v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 - 432\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4\omega_1^2\omega_2^3 - 54\omega_3^2\omega_1^3v_2^2\omega_2^2 - 24\omega_3\omega_4^2\omega_1^3v_2^2\omega_2 +$
$24\omega_3^2\omega_4^2\omega_1\omega_2^2 + 12\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^2 - 108\omega_3\omega_4\omega_1^3v_1^2\omega_2^3 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3^2\omega_4^2\omega_2^3v_2^3 + 72\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2 + 72\omega_3\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 +$
$48\omega_3\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2\omega_1^2v_1^2\omega_2^3 - 324\omega_3\omega_4c_s^2\omega_1^3\omega_2^3 - 216\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 180\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 - 72\omega_4^2\omega_1^2v_1^2\omega_2^3 + 48\omega_3\omega_4^2\omega_1^3\omega_2 -$
$144\omega_3^2\omega_4^2\omega_2^3 + 216\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 - 63\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^3 - 36\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 - 180\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 +$
$20\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 108\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 - 72\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^2 + 189\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3)\frac{\rho v_1 v_2}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} =$
$(\omega_6^2\omega_8\omega_5 - \omega_6\omega_8^2\omega_5 + \omega_6\omega_5^3 + 2\omega_6\omega_8^2\omega_5^2 + \omega_6^2\omega_8\omega_5^3 - 2\omega_6^2\omega_8\omega_5^2 - \omega_8^2\omega_5^2 - 2\omega_6\omega_8\omega_5^3 - \omega_6^2\omega_8^2\omega_5^2 + \omega_8\omega_5^3 - 2\omega_6^2\omega_8^2 - \omega_6^2\omega_5^3 + 3\omega_6^2\omega_8^2\omega_5 + \omega_6^2\omega_5^2)\frac{2c_s^4v_3}{\omega_6^2\omega_8^2\omega_5^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (-252\omega_4^2c_s^4\omega_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3v_2^3 - 432\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 - 8\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2v_3^2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 8\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 -$
$432\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 - 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 30\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 81\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 176\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 -$
$96\omega_3^2\omega_4^2\omega_1^3v_2^2 - 54\omega_4^2c_s^2\omega_1^3\omega_2^3 - 432\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 - 104\omega_3^2\omega_4^2c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 64\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 - 72\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 -$
$56\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2v_3^2 + 8\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 + 96\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 24\omega_4^2c_s^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2v_2^4\omega_2^3 + 112\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 10\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 + 27\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 +$
$120\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2v_3^2 - 104\omega_3^2\omega_4^2c_s^2\omega_1^3 - 192\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 32\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 84\omega_4^2c_s^2\omega_1^2\omega_2^3 - 84\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 10\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 +$
$324\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 24\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 + 192\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 27\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 + 10\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 +$
$162\omega_4^2c_s^2\omega_1^3\omega_2^3 + 432\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 - 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 + 80\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 108\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 192\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 27\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 - 72\omega_4^2c_s^4\omega_1^3\omega_2^2 +$
$8\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 - 30\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 168\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_2^3 + 32\omega_3^2\omega_4^2c_s^2\omega_2^3v_3^2 - 60\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3v_3^2 + 144\omega_3^2\omega_4^2c_s^4\omega_2^3 +$
$96\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 64\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 - 108\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 + 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 72\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 - 96\omega_3^2\omega_4^2v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 -$
$24\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 24\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 108\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2v_3^2 + 8\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 - 168\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 -$
$40\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 216\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 432\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 10\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 + 81\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2\omega_2^3v_3^2 +$
$864\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 60\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2v_3^2 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4 - 54\omega_3^2c_s^2\omega_1^3\omega_2^2v_3^2 - 8\omega_3\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 + 432\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2v_3^2 +$
$64\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 + 32\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 - 324\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3 + 72\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 +$
$56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 + 72\omega_3^2\omega_4^2v_2^2\omega_2^3v_3^2 + 8\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 + 128\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 - 27\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^2v_3^2 + 54\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2)\frac{v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12}^2 + 4\omega_6\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$
$4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$8\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 +$
$4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 10\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_9^2\omega_{12}^2 +$
$4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12} - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_8\omega_5^3\omega_9^2\omega_{12}^2 +$
$2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 4\omega_6^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 +$

$6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 4\omega_6^2\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 - 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_9^2\omega_{12}^2 - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_8\omega_5^3\omega_9^2\omega_{12}^2 - 8\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 8\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 5\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 8\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 + 5\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2)\frac{c_s^2\rho v_1 v_3}{2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (-2\omega_3\omega_4\omega_2 v_3^2 - 6\omega_3\omega_4 c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4 c_s^2\omega_1 - 27\omega_4 c_s^2\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_4\omega_1\omega_2 v_3^2 + 9\omega_3\omega_1\omega_2 v_3^2 - 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_3^2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_1 v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (2\omega_6\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_6^2\omega_{17}\omega_5^2\omega_{15}^2 + 2\omega_6^2\omega_8\omega_5^3\omega_{15}^2 - 4\omega_6^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_6^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6^2\omega_{17}\omega_5^3\omega_{15}^2 + \omega_{17}\omega_8\omega_5^3\omega_{15}^2 - \omega_6\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 4\omega_6^2\omega_{17}\omega_8^2\omega_{15}^2 + \omega_6^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 3\omega_6^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_6\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6^2\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_6\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + \omega_6^2\omega_8^2\omega_5^3\omega_{15} + 5\omega_6^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6^2\omega_8^2\omega_5^2\omega_{15} - \omega_6^2\omega_{17}\omega_8^2\omega_5^3 + \omega_6\omega_{17}\omega_5^3\omega_{15}^2 - \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6^2\omega_{17}\omega_8^2\omega_5\omega_{15} + \omega_6^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6^2\omega_{17}\omega_8^2\omega_5^2 - 2\omega_6\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - \omega_6^2\omega_8^2\omega_5^3\omega_{15}^2)\frac{c_s^2\rho v_2 v_3}{\omega_6^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (-3\omega_3\omega_1\omega_2^3 v_3^2 - 24\omega_3 c_s^2\omega_1\omega_2^2 + 10\omega_3\omega_1^3\omega_2 - 20\omega_3\omega_1^2\omega_2^2 - 24\omega_3 c_s^2\omega_1\omega_2^3 + 4\omega_1^2\omega_2^2 v_3^2 + 2\omega_1\omega_2^3 + 28\omega_3 c_s^2\omega_1^3 + 12 c_s^2\omega_1^2\omega_2^2 - 13\omega_3\omega_1 v_2^2\omega_2^3 + 14\omega_3\omega_1^2\omega_2 + 26\omega_3 c_s^2\omega_2^3 - 4\omega_3\omega_1\omega_2^2 v_3^2 - 2\omega_1^3\omega_2 v_3^2 + 16\omega_3\omega_1^3 v_2^2 - 6 c_s^2\omega_1^3\omega_2 - 4\omega_3\omega_1^2\omega_2 v_3^2 - 13\omega_3\omega_1^3 v_2^2\omega_2 + 4\omega_3\omega_1^3 v_3^2 - 4\omega_3\omega_1 v_2^2\omega_2^2 - 6 c_s^2\omega_1\omega_2^3 - 30\omega_3 c_s^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2\omega_2^2 v_3^2 - 2\omega_1\omega_2^3 v_3^2 + 26\omega_3\omega_1^2 v_2^2\omega_2^2 + 4\omega_3\omega_2^3 v_3^2 - 10\omega_3\omega_2^3 - 22\omega_3\omega_1^2 v_2^2\omega_2 - 3\omega_3\omega_1^3\omega_2 v_3^2 + 8\omega_3\omega_1\omega_2^2 - 24\omega_3 c_s^2\omega_1^3\omega_2 + 2\omega_1^3\omega_2 - 12\omega_3\omega_1^3 + 10\omega_3\omega_1\omega_2^3 + 48\omega_3 c_s^2\omega_1^2\omega_2^2 + 10\omega_3 v_2^2\omega_2^3 - 4\omega_1^2\omega_2^2)\frac{\rho v_2 v_3}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (-36 - \omega^3 - 16\omega^2 + 54\omega)\frac{c_s^4\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (-18\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 36\omega_6^3\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 24\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_{15}\omega_9\omega_{12} + 6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_8 v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 v_2^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_8^2 v_1^2\omega_5^3\omega_{15} - 6\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3 v_2^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2 v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 30\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 6\omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_9\omega_{12} - 2\omega_6^3\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_7^2\omega_{17}\omega_8^2 v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5^3\omega_{15}\omega_{12} - 24\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5 v_2^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_9\omega_{12} - 24\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6\omega_{13}\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - \omega_6^3\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} - 6\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 48\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} -$

$12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 24\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{15}\omega_{12} - 12\omega_6^3\omega_{13}\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_9 + 6\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_8v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15}\omega_9 + 12\omega_6^3\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 + 10\omega_6^3\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} +$
$18\omega_6\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} - 18\omega_6^3\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 24\omega_6\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 -$
$6\omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_8v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} -$
$36\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} + 36\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 18\omega_6^2\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 24\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_9\omega_{12} +$
$12\omega_6^2\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6^3\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_9\omega_{12} +$
$12\omega_6^3\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} +$
$6\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} +$
$24\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5v_2^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 24\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12} -$
$12\omega_6\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_7\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_{12} - 24\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_{12} +$
$12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^3\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 48\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{15} - 18\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9 +$
$12\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} + 24\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8v_1^2\omega_5\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_9 +$
$12\omega_6^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} +$
$6\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$12\omega_6^3\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{15}\omega_9 + 12\omega_6^2\omega_7\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_7c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$
$24\omega_6^3\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{15}\omega_{12} - 6\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3v_2^2\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12})\frac{c_s^2\rho}{12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_3} = (-12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} + 24\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 -$
$12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9 + 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} +$
$12\omega_6^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} +$
$12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12} + 12\omega_6\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_{15}\omega_9\omega_{12} +$
$12\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12} - 18\omega_6\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9 +$
$12\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} + 6\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} -$
$12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 10\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} -$
$12\omega_6^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 18\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} -$
$\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12} + 6\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12} -$
$12\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 12\omega_6\omega_{13}\omega_7\omega_{17}\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9 + 12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} -$
$18\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} - 6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12})\frac{c_s^4\rho}{12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_3} = (24\omega_3\omega_1^3\omega_2 - 24\omega_3\omega_{13}\omega_2^2 - 2\omega_3\omega_{13}\omega_1^2\omega_2^2 + 12\omega_3\omega_1^2\omega_2^2 - 6\omega_3\omega_{13}\omega_1^2\omega_2 - 12\omega_3\omega_1^2\omega_2 + 12\omega_{13}\omega_1\omega_2^2 - 12\omega_3\omega_1^3\omega_2^2 - \omega_3\omega_{13}\omega_1^3\omega_2^2 -$
$6\omega_{13}\omega_1^2\omega_2^2 + 12\omega_{13}\omega_1^3 + 12\omega_1^3\omega_2^2 - 6\omega_{13}\omega_1^3\omega_2 + 12\omega_3\omega_{13}\omega_1\omega_2 + 24\omega_3\omega_{13}\omega_1\omega_2^2 - 12\omega_1^3\omega_2 - 12\omega_3\omega_1^3 - 2\omega_{13}\omega_1^3\omega_2^2 - 12\omega_1^2\omega_2^2)\frac{c_s^4\rho}{12\omega_3\omega_{13}\omega_1^3\omega_2^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_3} = (108\omega_3^2\omega_4^2\omega_1\omega_5v_2^4\omega_2^3 - 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3 + 54\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^4 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 +$
$648\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 + 144\omega_3^2\omega_4\omega_1^2\omega_5v_2^2\omega_2^3 + 132\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2 - 348\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2 - 72\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2v_3^2 + 48\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 -$
$84\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^2 + 112\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 + 36\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 + 240\omega_3^2\omega_4^2c_s^2\omega_5\omega_2^3v_3^2 + 108\omega_3^2\omega_4c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 - 72\omega_3\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^2 -$
$72\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2\omega_5v_2^2\omega_2^2 + 288\omega_3^2\omega_4c_s^2\omega_1\omega_5\omega_2^3 - 36\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^2 - 54\omega_3^2\omega_1^3\omega_5v_2^4\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1\omega_5v_2^4\omega_2^2 +$
$36\omega_3\omega_4\omega_1^3\omega_5v_2^2\omega_2^2 + 54\omega_3\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^3 + 108\omega_3^2\omega_4c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1\omega_5v_2^4\omega_2^3 + 132\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 - 48\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2v_3^2 +$
$64\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2 + 18\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^3 - 60\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 - 216\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 + 336\omega_3\omega_4^2c_s^2\omega_1\omega_5\omega_2^3v_3^2 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 +$
$24\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_3^2 + 108\omega_3^2\omega_1^2\omega_5v_2^4\omega_2^3 - 27\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3\omega_5v_2^2\omega_2^2 - 216\omega_3^2\omega_4^2c_s^2\omega_5v_2^2\omega_2^3 - 4\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 + 72\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3 +$
$6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 + 264\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2 + 216\omega_3^2\omega_4^2\omega_5v_2^2\omega_2^3v_3^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 - 36\omega_3\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^3 - 216\omega_3^2\omega_4c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 -$
$28\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2 + 12\omega_3\omega_4^2\omega_1\omega_5v_2^4\omega_2^3 - 54\omega_3^2\omega_4\omega_1^3\omega_5v_2^2\omega_2^3 - 162\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 - 72\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^3 +$
$180\omega_3\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^3 + 24\omega_3\omega_4^2\omega_1^3\omega_5v_2^2\omega_2 - 96\omega_3^2\omega_4^2\omega_5v_2^4\omega_2^3 + 288\omega_3^2\omega_4c_s^4\omega_1^2\omega_5\omega_2^3 - 6\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 - 36\omega_3\omega_4\omega_1^2\omega_5v_2^2\omega_2^3 -$
$108\omega_3^2\omega_4c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2v_3^2 - 12\omega_3\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^2 + 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 + 48\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2v_3^2 + 60\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 -$
$18\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^2 + 288\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_3^2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 160\omega_3\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 - 180\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^3v_3^2 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 36\omega_3^2\omega_4\omega_1^2\omega_5v_2^4\omega_2^2 +$
$32\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5 + 324\omega_3^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 + 64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2 + 54\omega_3^2\omega_1^3\omega_5v_2^2\omega_2^3 + 36\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^2 + 72\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^2 - 24\omega_3^2\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^2 -$
$36\omega_3\omega_4\omega_1^3\omega_5v_2^4\omega_2^2 + 72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 - 54\omega_3\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^3 - 180\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 - 36\omega_3^2\omega_4\omega_1\omega_5v_2^2\omega_2^3 -$
$648\omega_3^2\omega_4c_s^2\omega_1\omega_5\omega_2^3v_3^2 + 108\omega_3\omega_4c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 - 18\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2\omega_5\omega_2^3v_3^2 - 108\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 -$
$112\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 - 108\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 - 288\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 + 300\omega_3^2\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^3 -$

$48\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^3 - 288\omega_3^2\omega_4c_s^4\omega_1\omega_5\omega_2^3 - 72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 - 468\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 - 2\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 - 54\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^3 -$
$144\omega_3^2\omega_4\omega_1^2\omega_5v_2^4\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^4\omega_2 + 152\omega_3^2\omega_4^2c_s^4\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2v_3^2 - 168\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2v_3^2 - 9\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 +$
$162\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 + 180\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 + 216\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^2 -$
$56\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 9\omega_3^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 - 12\omega_3^2\omega_4^2c_s\omega_1^3\omega_5\omega_2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2v_3^2 + 72\omega_3\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2 -$
$40\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5 - 108\omega_3^2\omega_4c_s^2\omega_1\omega_5v_2^2\omega_2^3 - 12\omega_3\omega_4^2\omega_1\omega_5v_2^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^4\omega_2 + 54\omega_3^2\omega_4\omega_1^3\omega_5v_2^4\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3\omega_5v_3^2 + 4\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 +$
$162\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 + 72\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_5v_2^2\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3\omega_5v_2^4\omega_2 + 36\omega_3\omega_4\omega_1^2\omega_5v_2^4\omega_2^3 + 16\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 + 12\omega_3\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^2 -$
$96\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2v_3^2 - 180\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2v_3^2 - 108\omega_3\omega_4c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2\omega_4c_s^4\omega_1^3\omega_5\omega_2^3 -$
$96\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2 + 18\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^2 - 288\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^2v_3^2 - 216\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 + 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 - 6\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 +$
$2\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 288\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 - 108\omega_3^2\omega_1^2\omega_5v_2^2\omega_2^3 + 27\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 + 9\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3\omega_5v_2^4\omega_2^2 +$
$360\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^2v_3^2 - 162\omega_3^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 - 6\omega_3^2\omega_4^2c_4^4\omega_1^3\omega_5\omega_2^3 - 88\omega_3^2\omega_4^2c_s^2\omega_5\omega_2^3 - 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 + 160\omega_3\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 -$
$120\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3v_3^2 + 24\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3v_3^2 + 9\omega_3^2\omega_4\omega_1^3v_1^4\omega_5\omega_2^3 - 72\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^3 + 264\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2v_3^2)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^3\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5^2\omega_{15}^2 + 12\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_{15}^2 +$
$3\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_{16}\omega_{10}^2\omega_7\omega_5^2v_2^2\omega_{15}^2 - 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - 3\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_{15} +$
$2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 24\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 -$
$4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2v_2^2\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2v_2^2\omega_{15}^2 + 12\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 +$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5v_2^2\omega_{15}^2 + 6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 - 6\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$9\omega_6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5\omega_{15}^2 + 3\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2v_2^2\omega_{15} - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5v_2^2\omega_{15}^2 -$
$4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5\omega_{15}^2 - 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} -$
$12\omega_6\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 + 2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 +$
$12\omega_6\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_6\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 -$
$12\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5^2v_2^2\omega_{15}^2 + 4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2v_2^2\omega_{15}^2 - 4\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 -$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5v_2^2\omega_{15} - 12\omega_6\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2v_2^2\omega_{15}^2 + 6\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2 -$
$12\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 12\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2 +$
$12\omega_6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2 + 24\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 +$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} - 4\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} -$
$3\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2 - 8\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 -$
$2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8v_2^2\omega_{15}^2 + 4\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 -$
$6\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15} + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 6\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8v_2^2\omega_{15} +$
$4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 - 8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5v_2^2\omega_{15}^2 + 9\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 + 8\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +$
$4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 6\omega_6\omega_{16}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2)\frac{v_1v_2v_3}{4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (\omega_1v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2v_3^2 - 3c_s^2\omega_2)\frac{v_1v_2v_3}{12\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_zv_1}$ **at** $\frac{\partial^4v_1}{\partial x_2^3\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_zv_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_zv_1} = (-2\omega_6c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15} - 2\omega_6^2c_s^2\omega_8\omega_5^3\omega_{15}^2 + \omega_6\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - 5\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_6^2\omega_{17}\omega_8^2\omega_5^2v_2^2 + 2\omega_6^2\omega_8\omega_5^3\omega_{15}^2 - \omega_6^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - 2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2 + 2\omega_6^2\omega_8^2\omega_5^2v_2^2\omega_{15} - 4\omega_6^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$6\omega_6^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_6c_s^2\omega_8\omega_5^3\omega_{15}^2 - \omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + \omega_6^2\omega_{17}\omega_8^2\omega_5^3v_2^2 + \omega_6^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6^2\omega_8^2\omega_5^2v_2^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{17}\omega_5^3\omega_{15}^2 - \omega_6\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$2\omega_6^2c_s^2\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_8\omega_5^3v_2^2\omega_{15}^2 + \omega_6c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + \omega_6^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6^2c_s^2\omega_{17}\omega_5^3\omega_{15}^2 - 2\omega_6^2\omega_8\omega_5^3v_2^2\omega_{15}^2 + 4\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$7\omega_6c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + \omega_6\omega_8^2\omega_5^3\omega_{15}^2 - 8\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_{15}^2 + \omega_6^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15}^2 - \omega_6\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6^2\omega_8\omega_5^2\omega_{15}^2 +$

$5\omega_6^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} + \omega_6^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_6^2\omega_8^2\omega_5^3v_2^2\omega_{15} - 6\omega_6c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2 + \omega_6^2\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15}^2 + \omega_6^2\omega_8^2\omega_5^3\omega_{15} - 2\omega_6\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - \omega_6^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - \omega_6^2c_s^2\omega_8^2\omega_5^3\omega_{15} - \omega_6^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 + 2\omega_6^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_6^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6^2\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - \omega_6^2\omega_{17}\omega_8^2\omega_5^3 - \omega_6\omega_8^2\omega_5^3v_2^2\omega_{15}^2 - 2\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6^2\omega_8\omega_5^2v_2^2\omega_{15}^2 + \omega_6\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 - 11\omega_6^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6^2\omega_{17}\omega_8^2\omega_5\omega_{15} - \omega_6^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6^2\omega_{17}\omega_8^2\omega_5^2 + \omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^3 - 7\omega_6c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6^2c_s^2\omega_8^2\omega_5^2\omega_{15} + \omega_6\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - \omega_6^2\omega_8^2\omega_5^3\omega_{15}^2 + 13\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - \omega_6c_s^2\omega_8^2\omega_5^3\omega_{15}^2 + \omega_6^2\omega_8^2\omega_5^3v_2^2\omega_{15}^2 - \omega_6\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15}^2)\frac{\rho v_2v_3}{2\omega_6^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_zv_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_zv_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_zv_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_zv_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_zv_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_zv_1} = (-18\omega_3^2\omega_4c_s^2 - 3\omega_3^2\omega_1v_3^2 + 3\omega_3^2\omega_1v_2^2 + 18\omega_4^2c_s^2\omega_1 - 2\omega_3\omega_4^2\omega_1v_3^2 + 18\omega_3\omega_4^2c_s^2 + 6\omega_3^2\omega_4 - 6\omega_3^2\omega_4v_3^2 - 18\omega_3\omega_4c_s^2\omega_1 - 2\omega_3^2\omega_4\omega_1 - 6\omega_3^2v_2^2 + 6\omega_3\omega_4^2v_3^2 + 2\omega_3\omega_4^2\omega_1 + 2\omega_3^2\omega_4\omega_1v_3^2 + 6\omega_3^2v_3^2 + 3\omega_4^2\omega_1v_3^2 - 6\omega_3\omega_4^2c_s^2\omega_1 + 12\omega_3\omega_4v_2^2 + 6\omega_3\omega_4\omega_1 + 3\omega_4^2\omega_1v_2^2 - 6\omega_4^2\omega_1 - 6\omega_4^2v_2^2 - 12\omega_3\omega_4 + 12\omega_4^2 - 6\omega_4^2v_3^2 + 36\omega_3\omega_4c_s^2 + 6\omega_3^2\omega_4c_s^2\omega_1 - 6\omega_3\omega_4^2 - 6\omega_3\omega_4\omega_1v_2^2 - 36\omega_4^2c_s^2)\frac{\rho v_2v_3}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_zv_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_zv_2} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_zv_2} = (4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_{15}^2 + 9\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_{16}\omega_{10}^2\omega_7\omega_5^2v_2^2\omega_{15}^2 - 12\omega_{10}^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 6\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - 3\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_{15} + 2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 8\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 + 6\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2 + 6\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2v_2^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2v_2^2\omega_{15}^2 + 4\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5v_2^2\omega_{15}^2 + 2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15}^2 - 12\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5\omega_{15}^2 + 3\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 6\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2v_2^2\omega_{15} - 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5v_2^2\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5\omega_{15}^2 - 12\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 24\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 + 6\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 4\omega_6\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_5^2\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5^2v_2^2\omega_{15}^2 + 12\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - 12\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2v_2^2\omega_{15}^2 - 4\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2 + 6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2 + 8\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} - 12\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 9\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2 - 24\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8v_2^2\omega_{15}^2 + 4\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15} + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 12\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2v_2^2 - 8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5v_2^2\omega_{15}^2 + 3\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 + 8\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2)\frac{\rho v_1v_3}{4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_zv_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_zv_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_zv_2} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_zv_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_zv_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_zv_2} = (\omega_1v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2v_3^2 - 3c_s^2\omega_2)\frac{\rho v_1v_3}{36\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_zv_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (2 + 3c_s^2\omega + \omega v_2^2 - \omega - 6c_s^2 - 2v_2^2)\,\tfrac{\rho v_1 v_2}{12\omega}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (-12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15} - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15} - 12\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$$
$$12\omega_6^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6^2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2v_2^2\omega_{15}^2 - 24\omega_6^2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_{15}^2 -$$
$$12\omega_6^2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 18\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15}^2 + 12\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15}^2 + 24\omega_6^2\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$$
$$\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 6\omega_6^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2v_2^2\omega_{15}^2 + \omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 + 6\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 +$$
$$6\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 36\omega_6^2\omega_{16}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 12\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5\omega_{15}^2 + 54\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} +$$
$$6\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 54\omega_6^2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 -$$
$$12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2 + 6\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 + 36\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}^2 + 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$$
$$6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 + 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2 + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5v_2^2\omega_{15}^2 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$24\omega_6^2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 36\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 +$$
$$12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5\omega_{15} - 12\omega_6^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2 - 42\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$6\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 - 3\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2 - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2v_2^2\omega_{15} +$$
$$3\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 30\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 9\omega_6^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$$
$$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 9\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}^2 - 12\omega_6^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15}^2 +$$
$$12\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 - 12\omega_6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2v_2^2\omega_{15}^2 - 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2v_2^2\omega_{15}^2 +$$
$$18\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15}^2 - 24\omega_6\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 54\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$$
$$12\omega_6^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 54\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 18\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2 -$$
$$6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 18\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 12\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 18\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5v_2^2\omega_{15} +$$
$$12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_2^2\omega_{15}^2 + 12\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15}^2 - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 +$$
$$12\omega_6^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5v_2^2 + 12\omega_6^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2v_2^2\omega_{15} - 6\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$$
$$6\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15}^2 - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}^2 - 6\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 +$$
$$12\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 3\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$$
$$18\omega_6^2\omega_{16}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 24\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}^2 - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 +$$
$$6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2 - 9\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5v_2^2\omega_{15}^2 -$$
$$12\omega_6^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15}^2 + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 - 9\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 - 36\omega_6^2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$$
$$6\omega_6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15}^2 - 36\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5 + 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} +$$
$$12\omega_6^2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 42\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 24\omega_6^2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 12\omega_6^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$$
$$12\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2 + 12\omega_6^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 24\omega_6^2\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2)\,\tfrac{\rho v_1 v_2}{12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (\omega_{16}v_2^2 + \omega_{16}\omega_{10}v_2^2 - \omega_{16} + 3\omega_{10} + 3\omega_{16}c_s^2 + 3\omega_{16}\omega_{10}c_s^2 - \omega_{16}\omega_{10} - 9\omega_{10}c_s^2 - 3\omega_{10}v_2^2)\,\tfrac{\rho v_1 v_2}{12\omega_{16}\omega_{10}}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (-9c_s^2\omega_5 - \omega_{11}\omega_5 - 3\omega_5v_2^2 + 3c_s^2\omega_{11} + 3c_s^2\omega_{11}\omega_5 - \omega_{11} + \omega_{11}v_2^2 + \omega_{11}\omega_5v_2^2 + 3\omega_5)\,\tfrac{\rho v_1 v_2}{12\omega_{11}\omega_5}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (-9\omega_3\omega_1v_2^2\omega_2 - 9\omega_4\omega_1v_2^2\omega_2 - 18\omega_3\omega_4\omega_2v_3^2 + 6\omega_3\omega_4c_s^2\omega_2 + 18\omega_3\omega_4c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4c_s^2\omega_1 + 6\omega_3\omega_4\omega_1v_2^2\omega_2 -$$
$$27\omega_4c_s^2\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 4\omega_3\omega_4v_2^2\omega_2 + 9\omega_3\omega_1\omega_2 + 18\omega_3\omega_4\omega_1v_3^2 + 2\omega_3\omega_4\omega_2 + 2\omega_3\omega_4\omega_1v_2^2)\,\tfrac{\rho v_1 v_2}{72\omega_3\omega_4\omega_1\omega_2}$$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (24 - 24v_1^2 + \omega^3v_1^2 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 5c_s^2\omega^3 - 14\omega^2v_1^2 - 46c_s^2\omega^2 - 36\omega + 36\omega v_1^2 - 72c_s^2)\,\tfrac{c_s^2v_1}{12\omega^3}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (12\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_9^2 - 12\omega_6^2\omega_{13}v_3^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}c_s^4\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{13}^2v_3^2\omega_9^3 + 72\omega_6^3\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^2 +$$
$$6\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_9^2 - 6\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_9^3 - 12\omega_6^2\omega_{13}c_s^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{13}^2v_1^2v_3^2\omega_9^3 + 6\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_9^2 + 18\omega_6^3\omega_{13}^2c_s^4\omega_{18}\omega_9^3 -$$
$$12\omega_6^2\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^3 - 42\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{18}\omega_9^3 + 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{13}^2c_s^4\omega_9^3 + 24\omega_6\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^3 - 36\omega_6^3\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^3 +$$
$$12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}c_s^4\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^3 - 36\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18} +$$
$$5\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^3 - 18\omega_6^3\omega_{13}^2c_s^4\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}v_1^2v_3^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18} +$$
$$18\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{13}^2c_s^2v_3^2\omega_9^3 + 12\omega_{6\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^3} - 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{13}^2v_3^2\omega_{18}\omega_9^3 -$$
$$36\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^3 + 18\omega_6^3\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^3 - 18\omega_6^3\omega_{13}^2c_s^4\omega_9^3 + 108\omega_6^2\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^3 - 54\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9 + 12\omega_6\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^3 -$$
$$36\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_9^2 - 36\omega_6^3\omega_{22}c_s^2v_3^2\omega_{18}\omega_9^2 - 72\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_9^2 + 2\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^2 -$$
$$18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{13}^2c_s^2\omega_{18}\omega_9^3 + 36\omega_6^2\omega_{13}c_s^4\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}v_3^2\omega_{18}\omega_9^3 + 6\omega_6^3\omega_{13}^2v_3^2\omega_9^3 - 36\omega_6^2\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^2 -$$
$$18\omega_6^3\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^2 - 12\omega_{6\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^3} + 24\omega_{6\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^2} + 12\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}^2v_3^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9^2 -$$
$$36\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18} + 12\omega_6^3\omega_{22}v_3^2\omega_{18}\omega_9^2 - \omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^3 - 24\omega_6\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^3 + 6\omega_6^3\omega_{13}^2c_s^2\omega_{18}\omega_9^2 +$$
$$12\omega_6\omega_{22}\omega_{13}c_s^4\omega_{18}\omega_9^3 - 12\omega_{6\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^2} - 36\omega_6^3\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9 - 36\omega_6^3\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^3 + 36\omega_6^3\omega_{22}c_s^2v_3^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{13}^2c_s^2\omega_{18}\omega_9^3 -$$
$$12\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{13}^2c_s^2\omega_9^3 + 12\omega_6^2\omega_{22}v_3^2\omega_{18}\omega_9^3 - 42\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^2 - 72\omega_6\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^3 -$$
$$36\omega_6^3\omega_{13}c_s^4\omega_{18}\omega_9^3 - 88\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^3 + 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}v_1^2v_3^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_9^2 -$$

$12\omega_6^3\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^2 - 24\omega_6\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9^3 + 72\omega_6\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^2 -$
$12\omega_6^3\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{13}^2v_3^2\omega_{18}\omega_9^3 - 96\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^3 +$
$12\omega_6^3\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_9^2 - 12\omega_6^3\omega_{22}v_1^2v_3^2\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^3 + 6\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^3 +$
$30\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{18}\omega_9^3 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_9^2 + 150\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9 + 36\omega_6^3\omega_{13}c_s^4\omega_{18}\omega_9^2 +$
$12\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^2 + 18\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^3 +$
$6\omega_6^3\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^3 - 18\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{13}c_s^2\omega_{18}\omega_9^3 -$
$36\omega_6^2\omega_{13}^2c_s^4\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{13}^2v_1^2v_3^2\omega_9^3 - 6\omega_6^3\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^3 - 36\omega_6^2\omega_{22}c_s^2v_3^2\omega_{18}\omega_9^3 + 36\omega_6^2\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{13}^2c_s^2v_1^2\omega_9^3 +$
$6\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^2 - 84\omega_6\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^3 + 36\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{18} -$
$48\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9 - 2\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_9^2 - 24\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}c_s^4\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{13}v_3^2\omega_{18}\omega_9^3 +$
$180\omega_6\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^3 - 18\omega_6^3\omega_{13}^2c_s^2v_3^2\omega_9^3 + 18\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_9^2 + 18\omega_6^3\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{13}c_s^2\omega_{18}\omega_9^2 +$
$6\omega_6^3\omega_{13}^2c_s^2\omega_9^3 - 18\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^3 + 24\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{13}v_3^2\omega_{18}\omega_9^2 + \omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^3 +$
$12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_9^2 - 36\omega_6^2\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^2)\frac{v_1}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-12\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{18} - 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9 - 2\omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{13}c_s^2\omega_{18}\omega_9^3 +$
$36\omega_6\omega_{13}^2c_s^2\omega_9^3 + 12\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 6\omega_6^2\omega_{22}\omega_{13}^2\omega_9^2 + 12\omega_6\omega_{22}\omega_{18}\omega_9^3 + 36\omega_6\omega_{13}c_s^2\omega_{18}\omega_9^3 + 12\omega_6\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 -$
$12\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{13}c_s^2\omega_{18}\omega_9^2 + \omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^3 + 54\omega_6\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^3 - 12\omega_6\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}v_1^2\omega_{18}\omega_9^2 -$
$12\omega_6\omega_{22}v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{13}\omega_{18}\omega_9^2 - 6\omega_6^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 - 12\omega_6\omega_{13}^2\omega_9^3 - 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^3 - 12\omega_6\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^3 + 6\omega_6^2\omega_{22}\omega_{13}\omega_{18}\omega_9^3 +$
$12\omega_6^2\omega_{22}v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9 + 12\omega_6\omega_{13}^2v_1^2\omega_9^3 - 18\omega_6\omega_{22}\omega_{13}\omega_{18}\omega_9^3 - 18\omega_6^2\omega_{22}\omega_{13}\omega_{18}\omega_9^2 + 18\omega_6\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^2 +$
$54\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^2 + 6\omega_6^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 36\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{13}\omega_{18}\omega_9^3 + 18\omega_6^2\omega_{13}^2c_s^2\omega_{18}\omega_9^3 - 18\omega_6^2\omega_{13}^2c_s^2\omega_9^3 - 12\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^3 +$
$54\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^2 - 18\omega_6\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 + 18\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_9^2 + 18\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{18}\omega_9^2 - \omega_6^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3 +$
$36\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9^3 + 6\omega_6^2\omega_{13}^2\omega_9^3 - 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9 + 6\omega_6^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3 - 6\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^3 - 40\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^3 -$
$36\omega_6\omega_{22}c_s^2\omega_{18}\omega_9^3 + 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18} - 18\omega_6^2\omega_{13}^2c_s^2\omega_{18}\omega_9^2 - 6\omega_6^2\omega_{13}^2\omega_{18}\omega_9^3 - 36\omega_6\omega_{13}^2c_s^2\omega_{18}\omega_9^3 - 36\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9^2 - 36\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_9^2 +$
$12\omega_6\omega_{22}\omega_{13}^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{18}\omega_9^3 + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}^2v_1^2\omega_9^2 + 5\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^3 + 18\omega_6\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^3 - 36\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^2 +$
$12\omega_{22}\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{13}v_1^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9 + 12\omega_6\omega_{13}v_1^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_{18} - 12\omega_6^2\omega_{13}v_1^2\omega_{18}\omega_9^3 + 36\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^3 -$
$12\omega_6\omega_{13}\omega_{18}\omega_9^3 - 6\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^2 + 6\omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9 - 6\omega_6^2\omega_{13}^2v_1^2\omega_9^3)\frac{c_s^2v_1}{12\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (6\omega_4^3\omega_2^2\omega_{12} + 18\omega_4\omega_2^2\omega_{12}^2 + 12v_1^2\omega_2^2\omega_{12}^2 + 18\omega_4^2c_s^2\omega_2\omega_{12}^2 - 6\omega_4^3v_1^2\omega_2^2\omega_{12} - 12\omega_4^2v_1^2\omega_{12}^2 - 6\omega_4^2\omega_2\omega_{12}^2 - 36\omega_4^2c_s^2\omega_2^2 + 54\omega_4^3c_s^2\omega_2\omega_{12} +$
$4\omega_4^2v_1^2\omega_2^2\omega_{12}^2 - 12\omega_4^2v_1^2\omega_2^2 - 40\omega_4^3c_s^2\omega_2\omega_{12}^2 + 6\omega_4^2v_1^2\omega_2^2\omega_{12} + 36\omega_4^2c_s^2\omega_2\omega_{12} + \omega_4^3v_1^2\omega_2^2\omega_{12}^2 - 12\omega_2^2\omega_{12}^2 - 12\omega_4^2\omega_2\omega_{12} - 54\omega_4c_s^2\omega_2^2\omega_{12}^2 - 36\omega_4^2c_s^2\omega_{12}^2 -$
$\omega_4^3\omega_2^2\omega_{12}^2 - 12\omega_4^3\omega_{12}^2 + 36\omega_4^3c_s^2\omega_2^2 - 12\omega_4^3v_1^2\omega_2 + 12\omega_4^3\omega_2\omega_{12}^2 + 12\omega_4^3v_1^2\omega_{12}^2 - 36\omega_4^3c_s^2\omega_{12} + 12\omega_4^3\omega_2 - 18\omega_4v_1^2\omega_2^2\omega_{12}^2 + 12\omega_4^2v_1^2\omega_2\omega_{12} +$
$5\omega_4^3c_s^2\omega_2^2\omega_{12}^2 - 6\omega_4^2\omega_2^2\omega_{12} + 12\omega_4^2\omega_2^2 - 12\omega_4^3v_1^2\omega_2\omega_{12}^2 + 18\omega_4^2c_s^2\omega_2^2\omega_{12} - 4\omega_4^2\omega_2^2\omega_{12}^2 + 18\omega_4^3v_1^2\omega_2\omega_{12} + 12\omega_4^2c_s^2\omega_2^2\omega_{12}^2 + 6\omega_4^2v_1^2\omega_2\omega_{12}^2 -$
$18\omega_4^3c_s^2\omega_2^2\omega_{12} + 12\omega_4^2\omega_{12}^2 - 18\omega_4^3\omega_2\omega_{12} - 12\omega_4^3v_1^2\omega_{12} - 12\omega_4^3\omega_2^2 + 36\omega_4^3c_s^2\omega_{12}^2 + 36c_s^2\omega_2^2\omega_{12}^2 - 36\omega_4^3c_s^2\omega_2 + 12\omega_4^3\omega_{12} + 12\omega_4^3v_1^2\omega_2^2)\frac{c_s^2v_1}{12\omega_4^3\omega_2^2\omega_{12}^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-72\omega_4^2c_s^4\omega_1^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1^3v_3^2 + 27\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^4 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 16\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 4\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 +$
$35\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 60\omega_3^2\omega_4^2\omega_2^3v_3^4 - 16\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 30\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3v_3^2 + 36\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 + 16\omega_3^2\omega_4^2c_s^2v_1^2\omega_2^3 -$
$18\omega_4^2c_s^2\omega_1^3\omega_2^3 + 20\omega_3^2\omega_4^2c_s^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 15\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 32\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 + 72\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^4 - 32\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 12\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2v_3^2 +$
$66\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 + 12\omega_4^2c_s^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2v_3^2 + 74\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 27\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^2 + 49\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 52\omega_3^2\omega_4^2c_s^2\omega_1^3 + 36\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 +$
$216\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 24\omega_4^2c_s^2\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 25\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 108\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 12\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 + 18\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 -$
$12\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2v_3^2 + 4\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 138\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 +$
$54\omega_4^2c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4^2v_1^2\omega_2^3 - 30\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2v_3^2 - 24\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 18\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 + 96\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 3\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 +$
$4\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 32\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2 + 324\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 - 4\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2 - 119\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2\omega_4^2v_1^2\omega_2^3v_3^2 -$
$102\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 36\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^4 + 4\omega_3^2\omega_4^2\omega_2^3 - 216\omega_3^2\omega_4^2c_s^2\omega_2^3v_3^2 + 12\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 - 8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 28\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 + 3\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 -$
$4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 78\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 9\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 - 4\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 + 12\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 - 84\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 324\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 -$
$36\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^4 - 72\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 - 138\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 16\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 + 8\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 +$
$24\omega_3^2\omega_4^2\omega_2^3v_3^2 - 28\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^2 - 20\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 + 24\omega_3^2\omega_4^2\omega_1^3v_3^4 - 24\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 + 60\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2v_3^2 - 27\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^2 -$
$58\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3 - 36\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^4 + 72\omega_3^2\omega_4^2c_s^4\omega_1^3 + 28\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 27\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^4 + 4\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 -$
$9\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 - 42\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 + 28\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 - 36\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 4\omega_3^2\omega_4^2\omega_1^3v_1^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3)\frac{v_1}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (-24 + 72v_1^2 - 18c_s^2\omega - 12\omega^2 - c_s^2\omega^3 + 36\omega^2v_1^2 + 8c_s^2\omega^2 + 36\omega - 108\omega v_1^2 + 12c_s^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (12\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_9^2 - 12\omega_6^2\omega_{13}v_3^2\omega_{18}\omega_9^3 - 36\omega_6^2\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{13}^2v_3^2\omega_9^3 + 24\omega_6^3\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_9^2 -$
$18\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_9^3 - 12\omega_6^2\omega_{13}c_s^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^2 - 18\omega_6^3\omega_{13}^2v_1^2v_3^2\omega_9^3 + 18\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_9^2 + 6\omega_6^3\omega_{13}^2c_s^4\omega_{18}\omega_9^3 -$
$36\omega_6^2\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^3 - 24\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}^2c_s^4\omega_9^3 + 24\omega_6\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^3 -$

$$6\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 + 36\omega_6^2\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_9^2 - \omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{18}\omega_9^2 -$$
$$6\omega_6^3\omega_{13}^2c_s^4\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^3 - 36\omega_6^2\omega_{22}v_1^2v_3^2\omega_{18}\omega_9^3 + 36\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^2 +$$
$$12\omega_6^2\omega_{13}^2c_s^2v_3^2\omega_9^3 - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{13}^2v_3^2\omega_{18}\omega_9^3 - 36\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^3 + 6\omega_6^3\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^3 -$$
$$6\omega_6^3\omega_{13}^2c_s^4\omega_9^3 + 36\omega_6^2\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^3 - 18\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9 + 84\omega_6\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_9^2 - 12\omega_6^3\omega_{22}c_s^2v_3^2\omega_{18}\omega_9^2 -$$
$$24\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{13}^2c_s^2\omega_{18}\omega_9^3 +$$
$$12\omega_6^2\omega_{13}c_s^4\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}v_3^2\omega_{18}\omega_9^3 + 6\omega_6^3\omega_{13}^2v_3^2\omega_9^3 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^2 + 60\omega_6\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^3 +$$
$$72\omega_6\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}^2v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}v_3^2\omega_{18}\omega_9^2 - 72\omega_6\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^3 +$$
$$6\omega_6^3\omega_{13}^2c_s^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}c_s^4\omega_{18}\omega_9^3 - 84\omega_6\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^3 +$$
$$12\omega_6^3\omega_{22}c_s^2v_3^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{13}^2c_s^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{13}^2c_s^2\omega_9^3 + 12\omega_6^2\omega_{22}v_3^2\omega_{18}\omega_9^3 + 60\omega_6^2\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^2 -$$
$$12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{18}\omega_9^2 - 18\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^2 - 24\omega_6\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{13}c_s^4\omega_{18}\omega_9^3 - 4\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^3 + 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^2 -$$
$$36\omega_6^2\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9 + 36\omega_6^3\omega_{22}v_1^2v_3^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_9^2 - 36\omega_6^3\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^3 - 18\omega_6^3\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9 - 36\omega_6^2\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^2 -$$
$$24\omega_6\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9^2 + 24\omega_6\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^2 + 72\omega_6^3\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9 - 36\omega_6^3\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^3 - 42\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^3 -$$
$$24\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}^2v_3^2\omega_{18}\omega_9^3 - 12\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^3 + 36\omega_6^3\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_9^2 -$$
$$36\omega_6^3\omega_{22}v_1^2v_3^2\omega_{18}\omega_9^2 - 72\omega_6^2\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{18}\omega_9^3 - 132\omega_6^2\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^3 -$$
$$36\omega_6^2\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{13}c_s^4\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9 + 24\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^2 +$$
$$180\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^2 + 108\omega_6^2\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^3 + 18\omega_6^3\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^3 - 54\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9 +$$
$$12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18} + 12\omega_6^3\omega_{13}c_s^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{13}^2c_s^4\omega_{18}\omega_9^3 - 108\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{13}^2v_1^2v_3^2\omega_9^3 +$$
$$78\omega_6^3\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}c_s^2v_3^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^3 + 36\omega_6^2\omega_{13}^2c_s^2v_1^2\omega_9^3 + 18\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^2 +$$
$$36\omega_6^2\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9 - 36\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^3 - 48\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9 - 18\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_9^2 -$$
$$24\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{13}v_3^2\omega_{18}\omega_9^3 + 18\omega_6\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{13}^2c_s^2v_3^2\omega_9^3 + 6\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_9^2 - 144\omega_6^3\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}\omega_9^2 -$$
$$12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{13}c_s^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}^2c_s^2\omega_9^3 - 24\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^3 + 24\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9^2 -$$
$$12\omega_6^3\omega_{13}v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_9^2 - 12\omega_6^2\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18} + 72\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^2)\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (-36\omega_6^3v_1^2\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}\omega_{13}\omega_{18}\omega_9 - 12\omega_6^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9 - 12\omega_6\omega_{22}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{13}c_s^2\omega_9^2 +$$
$$18\omega_6\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{13}v_1^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{13}v_1^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_9 + 12\omega_6\omega_{22}\omega_{13}\omega_{18}\omega_9 -$$
$$12\omega_6^2\omega_{13}c_s^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{13}\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{22}v_1^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9 - 36\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_9 + 6\omega_6^3\omega_{13}\omega_{18}\omega_9 - 72\omega_6^2\omega_{22}v_1^2\omega_{18}\omega_9^2 -$$
$$12\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{13}\omega_9^2 + 12\omega_6^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}c_s^2\omega_9^2 - 18\omega_6^3\omega_{13}v_1^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18} +$$
$$36\omega_6^2v_1^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9^2 + 36\omega_6^3v_1^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{13}v_1^2\omega_9^2 - 4\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^2 + 36\omega_6\omega_{22}v_1^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}c_s^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{18} +$$
$$12\omega_6^3c_s^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}\omega_{18}\omega_9^2 + 12\omega_6^2c_s^2\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{22}v_1^2\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_9 - 36\omega_6\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9 -$$
$$6\omega_6^3\omega_{13}c_s^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18} + 18\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18} -$$
$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{18}\omega_9 - 36\omega_6^2\omega_{13}v_1^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}\omega_9 - 12\omega_6^2\omega_{22}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{18} -$$
$$36\omega_6^3\omega_{22}v_1^2\omega_{18}\omega_9 + 6\omega_6^3\omega_{13}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_9 + 6\omega_6^3\omega_{13}c_s^2\omega_{18}\omega_9^2 - 12\omega_6^3c_s^2\omega_{18}\omega_9^2 + 72\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{18}\omega_9^2)\frac{c_s^2\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{18}\omega_9^2}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (12\omega_4^2c_s^2\omega_2^3 + 12\omega_2^2\omega_{12} - 12\omega_4^2c_s^2\omega_{12} + 12\omega_4c_s^2\omega_2^2\omega_{12} - 24\omega_4^2c_s^2\omega_2^2 - 36\omega_4v_1^2\omega_2\omega_{12} + 36\omega_4^2v_1^2\omega_2 + 12\omega_4^2c_s^2\omega_2 - 72\omega_4^2v_1^2\omega_2^2 +$$
$$18\omega_4^2c_s^2\omega_2\omega_{12} - 24\omega_4\omega_2^2 + 36\omega_4^2v_1^2\omega_2^3 - 36v_1^2\omega_2^2\omega_{12} + 24\omega_4\omega_2^3 - 12\omega_4\omega_2^2\omega_{12} + 72\omega_4v_1^2\omega_2^2 + 12c_s^2\omega_2^3 + 12\omega_4\omega_2\omega_{12} - 12c_s^2\omega_2^2\omega_{12} - 12\omega_4^2\omega_2^3 -$$
$$72\omega_4v_1^2\omega_2^3 + 24\omega_4^2\omega_2^2 - 4\omega_4^2c_s^2\omega_2^2\omega_{12} - 12\omega_4^2\omega_2 - 12\omega_4c_s^2\omega_2\omega_{12} - 24\omega_4c_s^2\omega_2^3 + 36\omega_4v_1^2\omega_2^2\omega_{12} - 12\omega_2^3 - \omega_4^2c_s^2\omega_2^3\omega_{12} + 36v_1^2\omega_2^3 + 24\omega_4c_s^2\omega_2^2)\frac{c_s^2\rho}{12\omega_4^2\omega_2^3\omega_{12}}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (90\omega_3\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 - 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2v_3^2 + 76\omega_3^2\omega_4c_s^4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 + \omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 18\omega_4\omega_1^2\omega_2^3v_3^4 +$$
$$12\omega_3^2\omega_4\omega_2^3v_3^2 + 18\omega_3^2\omega_1^2\omega_2^2v_3^2 - 24\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 - 6\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 108\omega_3^2\omega_4c_s^2\omega_2^3v_3^2 + 6\omega_3\omega_4\omega_1^2\omega_2^2v_3^4 + 18\omega_3\omega_1^2\omega_2^3v_3^4 -$$
$$12\omega_3^2\omega_4c_s^2\omega_1\omega_2^2v_3^2 + 24\omega_3^2\omega_4\omega_1^3v_3^4 + 18\omega_3\omega_1^3\omega_2^2v_3^2 - 18\omega_3\omega_4c_s^2\omega_1\omega_2^3v_3^2 + 12\omega_3^2\omega_4c_s^2\omega_1^3v_1^2 - 90\omega_3^2\omega_4\omega_1v_1^2\omega_2^3v_3^2 - 18\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^4 -$$
$$28\omega_3^2\omega_4c_s^4\omega_1\omega_2^2 + 16\omega_3^2\omega_4c_s^4\omega_1^3 + 216\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 + 8\omega_3\omega_4c_s^4\omega_1\omega_2^3 - 12\omega_3^2\omega_4c_s^2\omega_1^2\omega_2v_3^2 + 36\omega_3^2\omega_4\omega_1\omega_2^2v_3^2 + 18\omega_4\omega_1^3\omega_2^2v_3^2 - 12\omega_3^2\omega_4\omega_1^3v_1^2 +$$
$$66\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 + \omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 - 54\omega_3^2c_s^2\omega_1^2\omega_2^2v_3^2 - 36\omega_3\omega_4\omega_1^2\omega_2^3v_3^4 - 18\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 150\omega_3^2\omega_4c_s^2\omega_1\omega_2^3v_3^2 + 18\omega_3^2\omega_1\omega_2^3v_3^4 -$$
$$12\omega_3\omega_4\omega_1^3\omega_2v_3^4 - 48\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 - 68\omega_3^2\omega_4c_s^4\omega_2^3 - 9\omega_3^2\omega_4\omega_1^3\omega_2^2v_3^2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 + 18\omega_3^2\omega_1^2\omega_2^3v_3^2 +$$
$$54\omega_3c_s^2\omega_1^2\omega_2^3v_3^2 - 4\omega_3^2\omega_4\omega_1\omega_2^3 - 6\omega_3\omega_4\omega_1\omega_2^3v_3^2 + 132\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 + 12\omega_3^2\omega_4\omega_1^2v_1^2\omega_2 + 30\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 - 54\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 4\omega_3^2\omega_4\omega_2^3 +$$
$$18\omega_3^2\omega_1^3\omega_2^2v_3^4 + 32\omega_3^2\omega_4c_s^2\omega_1\omega_2^2 - 24\omega_3^2\omega_4\omega_1\omega_2^3v_3^2 - 90\omega_3^2\omega_4\omega_1^3v_1^2\omega_2v_3^2 - 126\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3\omega_4c_s^2\omega_1\omega_2^3 - 9\omega_3^2\omega_4\omega_1^2\omega_2^3v_3^4 -$$
$$36\omega_3^2\omega_4\omega_1^3\omega_2v_3^4 - 4\omega_3^2\omega_4\omega_1\omega_2^2 + 54\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 36\omega_3\omega_4\omega_1^3\omega_2^2v_3^2 - 144\omega_3^2\omega_4\omega_1v_1^2\omega_2^2v_3^2 - 174\omega_3^2\omega_4c_s^2\omega_1^3\omega_2v_3^2 - 96\omega_3^2\omega_4c_s^2v_1^2\omega_2^3 -$$
$$18\omega_3^2\omega_1^2\omega_2^3v_3^4 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^2v_3^2 + 18\omega_3\omega_4c_s^4\omega_1^3\omega_2^3 - 30\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 20\omega_3^2\omega_4c_s^2\omega_1^3 + 6\omega_3\omega_4\omega_1\omega_2^3v_3^4 + 6\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 +$$
$$36\omega_3\omega_4\omega_1^2\omega_2^3v_3^2 - 12\omega_3^2\omega_4v_1^2\omega_2^3 - 8\omega_3\omega_4c_s^2\omega_1^3\omega_2 + 2\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 - 54\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 + 36\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 + 24\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2 - 18\omega_3^2\omega_1\omega_2^3v_3^2 +$$
$$12\omega_3\omega_4\omega_1^3\omega_2v_3^2 - \omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 + 9\omega_3^2\omega_4\omega_1^3\omega_2^2v_3^4 + 18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2 + 9\omega_3^2\omega_4\omega_1^2\omega_2^3v_3^2 - 36\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 - \omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 +$$
$$2\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 54\omega_3^2c_s^2\omega_1\omega_2^3v_3^2 + 66\omega_3^2\omega_4\omega_1^3\omega_2v_3^2 + 36\omega_3\omega_4\omega_1^3\omega_2^2v_3^4 + 72\omega_3^2\omega_4\omega_1^3v_1^2v_3^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 + 54\omega_3\omega_4c_s^2\omega_1^2\omega_2^2v_3^2 -$$
$$18\omega_3^2\omega_1^3\omega_2^2v_3^2 - 56\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 54\omega_3c_s^2\omega_1^3\omega_2^2v_3^2 - 3\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 + 60\omega_3\omega_4c_s^2\omega_1v_1^2\omega_2^3 - 28\omega_3^2\omega_4c_s^4\omega_1^2\omega_2 + 54\omega_3^2\omega_4\omega_1\omega_2^3v_3^4 + 54\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 -$$
$$6\omega_3\omega_4\omega_1^2\omega_2^2v_3^2 - 18\omega_3\omega_4c_s^2\omega_1^3\omega_2^3 + 28\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^2 - 18\omega_3\omega_1^2\omega_2^3v_3^2 - 48\omega_3^2\omega_4\omega_1^3v_3^2 + 12\omega_3^2\omega_4\omega_1^2\omega_2v_3^4 - 36\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2v_3^2 -$$
$$2\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2 + 12\omega_3^2\omega_4\omega_1^3v_1^2\omega_2 + 8\omega_3\omega_4c_s^4\omega_1^3\omega_2 + 48\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_2^3 - 18\omega_4\omega_1^2\omega_2^3v_3^2 + 132\omega_3^2\omega_4c_s^2\omega_1^3v_3^2 - 48\omega_3^2\omega_4\omega_2^3v_3^4 - 18\omega_3^2\omega_1^2\omega_2^2v_3^4 +$$
$$12\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 + 108\omega_3^2\omega_4v_1^2\omega_2^3v_3^2 - 14\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 36\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 + 12\omega_3^2\omega_4\omega_1\omega_2^2v_3^4 + 180\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2v_3^2 - 14\omega_3^2\omega_4c_s^4\omega_1^3\omega_2 -$$
$$36\omega_3\omega_4c_s^2\omega_1^3\omega_2v_3^2 - 18\omega_4\omega_1^3\omega_2^2v_3^4 - 90\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 - 90\omega_3\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 + 28\omega_3^2\omega_4c_s^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1^2\omega_2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 - 18\omega_3\omega_1^3\omega_2^2v_3^4 +$$
$$12\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 - 84\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_2^2 - 216\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 - 42\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^2 + 32\omega_3^2\omega_4c_s^2\omega_1^2\omega_2 - 6\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2 + 56\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2 \partial x_3^2}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = (-2\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9^2 - 2\omega_6^3\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^2 + 4\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3 - 8\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9^3 - 4\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 +$$
$$\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 + 4\omega_6^3\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 - 7\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9 - 4\omega_6^3\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9^3 +$$
$$4\omega_6^3\omega_{22}\omega_{11}v_1^2\omega_{18}^2\omega_9^3 - \omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^3 + 2\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}^2\omega_9^3 + 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2 + 2\omega_6^3\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^3 + 9\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9^3 -$$
$$5\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9 - 4\omega_6^2\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3 - 3\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^2 - 4\omega_6^3\omega_{22}\omega_{11}v_1^2\omega_{18}^2\omega_9^2 + 4\omega_6^3\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9^2 - 4\omega_6^3\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 +$$
$$3\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 3\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 + 8\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3 - 4\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{18}^2\omega_9^3 + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9 -$$
$$3\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9^3 - \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3 - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9 - 6\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3 + 4\omega_6^2\omega_{22}\omega_{11}\omega_{18}^2\omega_9^3 - 24\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3 -$$
$$6\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2 + 4\omega_6^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - 2\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^2 - 2\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_9^3 - 2\omega_6^3\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3 +$$
$$4\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 2\omega_6^3\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3 + 7\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9^2 - 2\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^3 +$$
$$4\omega_6^2\omega_{13}^2\omega_{11}v_1^2\omega_{18}\omega_9^3 + 26\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3 + 8\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 - 15\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9 + 11\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3 +$$
$$2\omega_6^3\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3 - 9\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 - 2\omega_6^3\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - 4\omega_6^3\omega_{22}\omega_{11}\omega_{18}^2\omega_9^3 + \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}\omega_9^3 +$$
$$4\omega_6^3\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3 - 8\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9^2 - \omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2 - 4\omega_6^2\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^3 + 2\omega_6^3\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 +$$
$$2\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 - 4\omega_6^2\omega_{22}\omega_{11}v_1^2\omega_{18}^2\omega_9^3 + 4\omega_6^2\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9^3 - 2\omega_6^3\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2 + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2 - 4\omega_6^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3 -$$
$$8\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3 + 8\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9^3 - 4\omega_6^3\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3 - 8\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 + 4\omega_6^3\omega_{22}\omega_{11}\omega_{18}^2\omega_9^2 + 4\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^3 +$$
$$13\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2 - 2\omega_6^3\omega_{13}^2\omega_{11}v_1^2\omega_{18}\omega_9^3 - 4\omega_6^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 + 2\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^3 + 4\omega_6^2\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^3 - 6\omega_6\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9^3 +$$
$$6\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 - 5\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^3 + 4\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_9^3 + 2\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3 +$$
$$3\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2 + 2\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^2 - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}\omega_9^3 - 16\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^3 + 5\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9)\frac{\rho v_1 v_3}{2\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = (141\omega_3\omega_1\omega_2^3v_3^2 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 - 12\omega_3\omega_1^2v_1^2\omega_2 - 6\omega_1^3v_1^2\omega_2 + 50\omega_3\omega_1^3\omega_2^2v_3^2 + 12\omega_3v_1^2\omega_2^3 + 12\omega_3\omega_1^2\omega_2^2 + 108\omega_3c_s^2\omega_1\omega_2^3 +$$
$$6\omega_1\omega_2^3 - 6\omega_1v_1^2\omega_2^3 + 84\omega_3c_s^2\omega_1^3 + 36c_s^2\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2\omega_2 - 66\omega_3c_s^2\omega_2^3 + 60\omega_3\omega_1\omega_2^2v_3^2 - 18c_s^2\omega_1^3\omega_2 + 6\omega_3\omega_1^2\omega_2v_3^2 - 23\omega_3\omega_1^3\omega_2^2 + 48\omega_3\omega_1^3v_3^2 +$$
$$18\omega_3\omega_1^2v_1^2\omega_2^2 + 12\omega_3\omega_1^3v_1^2 - 18c_s^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 - 66\omega_3\omega_1^2\omega_2^2v_3^2 - 9\omega_3\omega_1v_1^2\omega_2^3 - 12\omega_3\omega_1v_1^2\omega_2^2 - 9\omega_3\omega_1^3v_1^2\omega_2 - 114\omega_3\omega_2^3v_3^2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 +$$
$$42\omega_3\omega_2^3 - 75\omega_3\omega_1^3\omega_2v_3^2 - 42\omega_3c_s^2\omega_1^2\omega_2^3 - 12\omega_3\omega_1\omega_2^2 - 50\omega_3\omega_1^2\omega_2^3v_3^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 + 12\omega_1^2v_1^2\omega_2^2 - 36\omega_3\omega_1^3 - 60\omega_3\omega_1\omega_2^3 - 12\omega_1^2\omega_2^2)\frac{\rho v_1 v_3}{18\omega_3\omega_1^3\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1 \partial x_2 \partial x_3^2}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 \rho} = (36\omega v_1v_2^2v_3^2 + 24c_s^2v_1^2v_2 + 36c_s^2\omega v_1v_3^2 + 14c_s^2\omega^2v_2v_3^2 + 36c_s^2\omega v_1v_2^2 - 36\omega v_1^2v_2v_3^2 + 24c_s^2v_2v_3^2 + 14c_s^2\omega^2v_1^2v_2 + c_s^2\omega^3v_1v_2^2 +$$
$$c_s^2\omega^3v_1v_3^2 - 36c_s^2\omega v_1^2v_2 - 24c_s^2v_1v_3^2 - 24c_s^2v_1v_2^2 - 24v_1v_2^2v_3^2 - 14\omega^2v_1v_2^2v_3^2 + 14\omega^2v_1^2v_2v_3^2 - c_s^2\omega^3v_2v_3^2 + 24v_1^2v_2v_3^2 - 36c_s^2\omega v_2v_3^2 -$$
$$14c_s^2\omega^2v_1v_3^2 - 14c_s^2\omega^2v_1v_2^2 - \omega^3v_1^2v_2v_3^2 + \omega^3v_1v_2^2v_3^2 - c_s^2\omega^3v_1^2v_2)\frac{1}{2\omega^3}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 \rho} = (-2\omega_6^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9 -$$
$$\omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12} - 2\omega_6^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{22}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 4\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^2\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_9\omega_{12} - \omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12} -$$
$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$
$$4\omega_6\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5v_2v_3^2\omega_{18}\omega_9 - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}\omega_9 -$$
$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_9\omega_{12} +$$
$$2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{22}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9 - 2\omega_6^3\omega_{22}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_{12} -$$
$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9 + 2\omega_6^2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_9\omega_{12} - 2\omega_6^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9 - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18} -$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 8\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5v_2\omega_{18}\omega_9\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_9\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^3\omega_{22}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_2v_3^2\omega_{18}\omega_9 - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5v_2\omega_{18}\omega_9 -$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$4\omega_6\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_9\omega_{12} -$$

$$\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9 + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{12} + 2\omega_6^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_9\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9 - 2\omega_6^2\omega_{22}\omega_{13}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9 +$$

$$12\omega_6\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_9\omega_{12} - 8\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2v_2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9 + \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_9\omega_{12} -$$

$$2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12} + 2\omega_6^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{12} -$$

$$2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9 - \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_9\omega_{12} -$$

$$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{12} +$$

$$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9 + 2\omega_6^2\omega_{22}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} -$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 8\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_9 +$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18} + \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$

$$4\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9 -$$

$$\omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_9\omega_{12} + 2\omega_6^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{12} -$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5v_2^2\omega_{18}\omega_9 - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_9\omega_{12} +$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_9\omega_{12} + 2\omega_6^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18} -$$

$$\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9 + 2\omega_6^2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} - 8\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_{12} -$$

$$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_9\omega_{12} +$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9 - 2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{12} +$$

$$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_9 - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} +$$

$$4\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_5v_2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$

$$2\omega_6^3\omega_{22}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{12} -$$

$$2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9 +$$

$$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_9\omega_{12} +$$

$$2\omega_6^2\omega_{22}\omega_{13}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12} -$$

$$2\omega_6^2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 4\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12} -$$

$2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12}+\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}\omega_9-$
$2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}+$
$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{12}+$
$2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12}+2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12}+\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}+$
$\omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{12}+\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_9\omega_{12}+2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^3\omega_{22}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{12}+2\omega_6^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_{12}-2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}+\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_9\omega_{12}+\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12}+\omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2\omega_{22}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12})\frac{1}{2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}=C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}=(2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_{12}-\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{12}+$
$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9+$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_9\omega_{12}-2\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_9\omega_{12}-\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}-$
$2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_{22}\omega_{13}c_s^2\omega_{14}v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18}+$
$2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_9\omega_{12}+2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18}\omega_9+2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}+$
$\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_{22}\omega_{20}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_1v_2^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1v_2^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-$
$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2v_3^2\omega_9\omega_{12}-2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}+2\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18}+$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_9\omega_{12}+\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}+2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{12}+$
$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12}-$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1^2\omega_5v_2\omega_9\omega_{12}+2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12}-2\omega_{22}\omega_{13}\omega_{14}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_9\omega_{12}+2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_{12}-2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}-$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{12}-\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_{22}\omega_{13}c_s^2\omega_{20}v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{20}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_{12}-$
$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1v_2^2\omega_{18}\omega_9\omega_{12}+2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_3^2\omega_9\omega_{12}+$
$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_9\omega_{12}+\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}-$
$2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_{22}\omega_{13}\omega_{20}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}-2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1v_2^2v_3^2\omega_{18}\omega_9-$
$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}-2\omega_{22}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_{22}\omega_{13}c_s^2\omega_{20}v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12}-\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1v_2^2v_3^2\omega_{18}\omega_9-$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}+$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}+\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1^2\omega_5v_2\omega_9\omega_{12}+2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}+2\omega_6\omega_{22}\omega_{13}\omega_{14}v_1^2v_2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{12}+$
$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_9\omega_{12}-\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}+$
$\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1v_2^2v_3^2\omega_{18}\omega_9\omega_{12}-$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1v_2^2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_{12}-2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9-$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12}-2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_9\omega_{12}+$
$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9-2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}-$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2v_2\omega_{18}\omega_9-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1^2v_2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_{12}-\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_{12}+$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_{12}-\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_{18}\omega_9+\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_9\omega_{12}+2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_{12}-2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{12}-2\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1v_2^2\omega_{18}\omega_9-2\omega_6\omega_{22}\omega_{13}\omega_{14}v_1^2\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}\omega_{20}v_1v_2^2v_3^2\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9-$
$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-$
$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}+\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1v_3^2\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5v_2^2\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9-$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1v_3^2\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_9\omega_{12}+2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{12}+$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_2v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_{22}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}-$
$\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_9\omega_{12}-2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_{12}-\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2v_3^2\omega_{18}\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_2v_3^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_9\omega_{12}-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1v_3^2\omega_{18}\omega_9\omega_{12}+2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+2\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12}-$
$2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1v_3^2\omega_{18}\omega_9+2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_1\omega_5v_3^2\omega_{18}\omega_9\omega_{12}-2\omega_{22}\omega_{13}c_s^2\omega_{20}v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12}+$

$$2\omega_{22}\omega_{13}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1^2 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} +$$
$$\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_9\omega_{12} + \omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}\omega_{20} v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{18} + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} v_1^2 v_2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} v_1^2 v_2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} v_1^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{20}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} v_1^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1^2 v_2 v_3^2\omega_{18}\omega_9 - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}\omega_{14} v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20} v_1^2 v_2 v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1 v_2^2\omega_{18}\omega_9\omega_{12} +$$
$$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_{12} - \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{18}\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14} v_1 v_2^2 v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_2 v_3^2\omega_{18}\omega_9 + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_9 - 2\omega_{22}c_s^2\omega_{20}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2 v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6\omega_{22}\omega_{20}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_{12} - 2\omega_6\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 v_1^2 v_2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1 v_2^2\omega_{18}\omega_9 +$$
$$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1^2 v_2\omega_{18}\omega_9 -$$
$$2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}\omega_{20}\omega_{14} v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} v_1\omega_5 v_2^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{18}\omega_{12} - \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_{12} +$$
$$2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} v_1^2 v_2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{14} v_1^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_9 -$$
$$2\omega_{22}\omega_{20}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_9\omega_{12} + \omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_9\omega_{12} +$$
$$2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} v_1\omega_5 v_2^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_{22}\omega_{13}c_s^2\omega_{14} v_1\omega_5 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5 v_2 v_3^2\omega_{18} +$$
$$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14} v_1 v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14} v_1 v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_9 +$$
$$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20} v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 v_1^2 v_2 v_3^2\omega_{18}\omega_9 - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1 v_3^2\omega_{18}\omega_9 - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1 v_2^2 v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6\omega_{22}\omega_{13}\omega_{20} v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_{12} +$$
$$\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{18}\omega_9\omega_{12})\frac{1}{2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (-252\omega_4^2 c_s^4\omega_1^2\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3 v_3^2 - 40\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_2^2\omega_2 - 432\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2 v_3^2 + 54\omega_3^2 c_s^2\omega_1^3\omega_2^3 + 8\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2 - 56\omega_3^2\omega_4^2 c_s^2\omega_1 v_2^2\omega_2^2 -$$
$$108\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^3 + 30\omega_3^2\omega_4^2 c_s^4\omega_1^3\omega_2^2 - 81\omega_3\omega_4^2 c_s^4\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2\omega_2^3 v_3^4 - 176\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^2 + 324\omega_3^2 c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3 v_2^2 - 84\omega_4^2 c_s^2\omega_1^2 v_2^2\omega_2^3 -$$
$$54\omega_4^2 c_s^2\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2 c_s^2\omega_1 v_2^2\omega_2^3 - 104\omega_3^2\omega_4^2 c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 64\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 v_3^4 - 72\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2 - 432\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^2 v_3^2 +$$
$$96\omega_3^2\omega_4^2\omega_1^3\omega_2 v_3^2 + 8\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2 + 24\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 108\omega_3^2 c_s^2\omega_1^2 v_2^2\omega_2^3 + 112\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2 + 10\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^3 - 27\omega_3\omega_4^2 c_s^2\omega_1^3 v_2^2\omega_2^3 +$$
$$120\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2^2 v_3^2 - 104\omega_3^2\omega_4^2 c_s^2\omega_1^3 - 16\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2^2 + 432\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_3^2 + 84\omega_4^2 c_s^2\omega_1^2\omega_2^3 - 56\omega_3\omega_4^2 c_s^2\omega_1 v_2^2\omega_2^3 - 10\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2^2 +$$
$$324\omega_3\omega_4^2 c_s^4\omega_1^2\omega_2^3 - 162\omega_3^2 c_s^4\omega_1^3\omega_2^3 - 24\omega_3\omega_4^2 c_s^4\omega_1^3\omega_2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2 c_s^2\omega_1^2\omega_2^3 + 192\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2^2 + 27\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^2\omega_2 v_3^4 +$$
$$162\omega_4^2 c_s^4\omega_1^3\omega_2^3 + 32\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_2^2 - 192\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^2 - 8\omega_3\omega_4^2 c_s^2\omega_1^3 v_2^2\omega_2 + 80\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2 + 192\omega_3\omega_4^2 c_s^4\omega_1^2\omega_2^2 + 27\omega_3^2\omega_4 c_s^2\omega_1^3 v_2^2\omega_2^3 -$$
$$72\omega_4^2 c_s^4\omega_1^3\omega_2^2 + 10\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_2^2\omega_2^2 - 432\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^3 v_3^2 - 30\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 168\omega_3^2\omega_4^2 c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_2^3 + 432\omega_3^2\omega_4^2 c_s^2\omega_2^3 v_3^2 -$$
$$60\omega_3^2\omega_4^2\omega_1 v_2^2\omega_2^3 v_3^2 + 144\omega_3^2\omega_4^2 c_s^4\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 v_2^2\omega_2 - 24\omega_4^2 c_s^2\omega_1^3 v_2^2\omega_2^2 - 54\omega_3^2 c_s^2\omega_1^3 v_2^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 v_3^2 + 108\omega_3\omega_4^2 c_s^2\omega_1^2 v_2^2\omega_2^3 +$$
$$8\omega_3^2\omega_4^2\omega_1 v_2^2\omega_2^2 - 8\omega_3^2\omega_4^2 v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2\omega_4^2 c_s^4\omega_1\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1 v_2^2\omega_2^3 + 64\omega_3\omega_4^2 c_s^2\omega_1^2 v_2^2\omega_2^2 + 108\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2 v_3^2 +$$
$$54\omega_4^2 c_s^2\omega_1^3 v_2^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1\omega_2^2 v_3^2 - 168\omega_3\omega_4^2 c_s^4\omega_1\omega_2^3 - 432\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2 v_3^2 + 72\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^4 - 216\omega_3^2\omega_4^2 c_s^4\omega_1\omega_2^2 - 8\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_2^2\omega_2 -$$
$$8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 81\omega_3^2\omega_4 c_s^4\omega_1^3\omega_2^3 - 96\omega_3^2\omega_4^2\omega_2^3 v_3^2 + 32\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_2^2\omega_2^2 - 60\omega_3^2\omega_4^2\omega_1^3 v_2^2\omega_2 v_3^2 + 48\omega_3^2\omega_4^2\omega_1^3 v_3^4 + 32\omega_3^2\omega_4^2 c_s^2 v_2^2\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1 v_2^2\omega_2^2 v_3^2 +$$
$$64\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^3 - 108\omega_3^2\omega_4 c_s^2\omega_1^2 v_2^2\omega_2^3 + 864\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^2 v_3^2 - 324\omega_3^2\omega_4 c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 36\omega_3^2\omega_4^2\omega_1^3\omega_2 v_3^4 + 144\omega_3^2\omega_4^2 c_s^4\omega_1^3 +$$
$$56\omega_3\omega_4^2 c_s^2\omega_1\omega_2^3 - 10\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_2^2\omega_2^3 + 72\omega_3^2\omega_4^2 v_2^2\omega_2^3 v_3^2 + 96\omega_3^2\omega_4^2\omega_1\omega_2^3 v_3^2 + 128\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^2 - 27\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3 v_2^2 v_3^2)\frac{v_2}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = (-14c_s^2\omega^2 v_3^2 - 2\omega^3 v_1 v_2 v_3^2 - 14c_s^2\omega^2 v_2^2 - 24v_2^2 v_3^2 - 2c_s^2\omega^3 v_1 v_2 + \omega^3 v_2^2 v_3^2 + c_s^2\omega^3 v_2^2 + 36\omega v_2^2 v_3^2 + c_s^2\omega^3 v_3^2 - 72c_s^2\omega v_1 v_2 +$$
$$48v_1 v_2 v_3^2 + 28\omega^2 v_1 v_2 v_3^2 - 14\omega^2 v_2^2 v_3^2 + 28c_s^2\omega^2 v_1 v_2 - 24c_s^2 v_3^2 - 24c_s^2 v_2^2 + 48c_s^2 v_1 v_2 - 72\omega v_1 v_2 v_3^2 + 36c_s^2\omega v_3^2 + 36c_s^2\omega v_2^2)\frac{\rho}{2\omega^3}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = (-2\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2 v_3^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8 v_1\omega_5^2 v_2 v_3^2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_{18}\omega_9 +$$
$$9\omega_6^3\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2 v_2\omega_{18}\omega_9^2\omega_{12} - 8\omega_6^2\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 v_2^2 v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5 v_2^2\omega_{18}\omega_9^2 + 2\omega_6^3\omega_{22}\omega_{13}^2 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_{18}\omega_9^2 + \omega_6^3\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_9 -$$
$$2\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 v_2^2 v_3^2\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_{18}\omega_9^2 - \omega_6^3\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5 v_2^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2 v_3^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5 v_2^2 v_3^2\omega_{18}\omega_9^2\omega_{12} - 14\omega_6^2\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2 v_2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$4\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^2\omega_{22}\omega_{13}^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_{18}\omega_9^2 - \omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_{18}\omega_9^2\omega_{12} +$$

$$2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9 - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_9^2\omega_{12} - \omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_2^2\omega_{18}\omega_9^2\omega_{12} +$$
$$4\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} -$$
$$4\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5v_3^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} +$$
$$4\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_9^2\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9^2\omega_{12} + 8\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_9^2\omega_{12} - 2\omega_6^3\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_9^2\omega_{12} +$$
$$4\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} -$$
$$4\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$4\omega_6^2\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_2v_3^2\omega_{18}\omega_9^2 + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_2\omega_{18}\omega_9^2\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2 + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2v_1\omega_5v_2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}v_1\omega_5v_2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5v_2^2v_3^2\omega_{18}\omega_9^2 + \omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9 - \omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2 +$$
$$4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_9^2\omega_{12} -$$
$$4\omega_6\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6^3\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} + 6\omega_6\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2 -$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9 + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2v_1\omega_5v_2v_3^2\omega_{18}\omega_9^2 + \omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_2\omega_{18}\omega_9^2 + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9^2 + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_2v_3^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$4\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} -$$
$$\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2 +$$
$$2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$4\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} + 8\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2 +$$
$$4\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$4\omega_6\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5v_2^2\omega_{18}\omega_9^2\omega_{12} -$$
$$\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_9^2\omega_{12} + 4\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6^3\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} - 8\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9 -$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} +$$
$$4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9 + 4\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_{12} + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} +$$
$$4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$
$$8\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9 - 2\omega_6^3\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^2\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} -$$

$2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} -$
$4\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_{12} +$
$\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_8^2v_1\omega_5v_2v_3^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9 + 4\omega_6^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_9^2\omega_{12} +$
$2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9^2\omega_{12} +$
$2\omega_6^3\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_9^2\omega_{12} -$
$\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_2^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_2^2\omega_{18}\omega_9^2 +$
$4\omega_6^2\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5v_2\omega_{18}\omega_9^2\omega_{12})\frac{\rho}{2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = (-2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18}\omega_9 + 4\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_9\omega_{12} -$
$4\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_{12} + 2\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_{12} + 4\omega_{22}\omega_{13}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2^2\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18} - 2\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}\omega_{13}\omega_{14}v_1v_2v_3^2\omega_{18}\omega_9\omega_{12} -$
$4\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_9\omega_{12} - 4\omega_6\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9 -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2\omega_{18}\omega_9 - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_{12} + 4\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18}\omega_9\omega_{12} -$
$2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_2^2\omega_{18}\omega_9 +$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_9\omega_{12} + 4\omega_6c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_{12} + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_5v_3^2\omega_{18}\omega_9\omega_{12} +$
$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18} - 4\omega_6\omega_{22}\omega_{13}\omega_{20}v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_{12} +$
$2\omega_{22}\omega_{13}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_9\omega_{12} +$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2^2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 4\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} +$
$4\omega_{22}\omega_{13}c_s^2\omega_{20}v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_{18}\omega_9 + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1v_2\omega_{18}\omega_9 -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 4\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} +$
$4\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_9\omega_{12} + \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_9\omega_{12} - 4\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1v_2v_3^2\omega_{18}\omega_9\omega_{12} +$
$4\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{18}\omega_{12} +$
$2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_9\omega_{12} + 4\omega_6\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_{12} - 4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{18}\omega_9 + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_9\omega_{12} +$
$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_{12} - 4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_9\omega_{12} -$
$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_{12} + 2\omega_{22}\omega_{13}\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} -$
$4\omega_6\omega_{22}\omega_{13}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_3^2\omega_{18}\omega_9 + 4\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_3^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_9\omega_{12} - \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_5v_3^2\omega_{18}\omega_9\omega_{12} -$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_{22}\omega_{13}\omega_{20}v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_5v_3^2\omega_{18}\omega_9\omega_{12} -$
$4\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_9\omega_{12} - 2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_9\omega_{12} -$
$4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_2^2\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_{18}\omega_9 + 4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} -$
$4\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}\omega_{14}\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_{12} -$
$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_2^2\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_1v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} -$
$4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1v_2\omega_{18}\omega_9\omega_{12} + 4\omega_{22}\omega_{13}c_s^2\omega_{14}v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_3^2\omega_{18}\omega_9\omega_{12} - 4\omega_6c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} -$
$4\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9 - 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18}\omega_9 - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18} -$
$2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_{12} -$
$4\omega_{22}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} - 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_{12} -$
$2\omega_{22}\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} + 2\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} -$
$4\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9 +$
$4\omega_6\omega_{22}\omega_{13}\omega_{20}v_1v_2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_9 + \omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_2^2v_3^2\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 4\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9 - 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_{12} +$
$4\omega_6\omega_{22}\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_{12} + 4\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_9\omega_{12} + 2\omega_{22}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_{14}v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_{12} + \omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_9\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_{12} + 2\omega_6\omega_{22}\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 4\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_9\omega_{12} +$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_9\omega_{12} +$
$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_{12} -$
$4\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_9\omega_{12} - 2\omega_{22}\omega_{13}\omega_{20}\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} +$
$4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{18} + 4\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1v_2v_3^2\omega_{18}\omega_9 + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18}\omega_9\omega_{12} +$
$4\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} - 4\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_9 + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} -$
$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 4c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18}\omega_9\omega_{12} +$
$4\omega_{22}\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1v_2\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_2^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} -$

$2\omega_6\omega_{22}\omega_{13}\omega_{20}v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1v_2v_3^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9 - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_{12} -$
$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_{12} + 4\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18} + 2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_9\omega_{12} - 2\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_9 - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_5v_2^2v_3^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_{12} +$
$2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 4\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9 + 4\omega_6\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{18}\omega_{12} +$
$2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_{12})\frac{\rho}{2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D_xD_yD_z^2}v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D_xD_yD_z^2}v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D_xD_yD_z^2}v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D_xD_yD_z^2}v_1} = (9\omega_3\omega_1v_2^2\omega_2 - 9\omega_4\omega_1v_2^2\omega_2 - 6\omega_3\omega_4c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4c_s^2\omega_1 - 27\omega_4c_s^2\omega_1\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 2\omega_3\omega_4v_2^2\omega_2 -$
$9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 2\omega_3\omega_4\omega_1v_2^2)\frac{\rho v_1v_2}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D_xD_yD_z^2}v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D_xD_yD_z^2}v_2} = (84c_s^2\omega^2v_3^2 + 12\omega^3v_1v_2v_3^2 - 216c_s^2\omega v_1^2 + 12c_s^2\omega^3v_1v_2 - 6c_s^2\omega^3v_3^2 + 144c_s^2v_1^2 + 84\omega^2v_1^2v_3^2 + 432c_s^2\omega v_1v_2 - 36c_s^4 - 288v_1v_2v_3^2 -$
$168\omega^2v_1v_2v_3^2 - 216\omega v_1^2v_3^2 - 168c_s^2\omega^2v_1v_2 - 6c_s^2\omega^3v_1^2 + 144c_s^2v_3^2 + 54c_s^4\omega - 16c_s^4\omega^2 + 144v_1^2v_3^2 - 6\omega^3v_1^2v_3^2 - 288c_s^2v_1v_2 + 432\omega v_1v_2v_3^2 -$
$c_s^4\omega^3 - 216c_s^2\omega v_3^2 + 84c_s^2\omega^2v_1^2)\frac{\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D_xD_yD_z^2}v_2} = (-24\omega_6^3\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 24\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_{12} -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_9\omega_{12} -$
$24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$24\omega_6\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9 -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{18}\omega_{12} - 12\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9 +$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$24\omega_6^3\omega_{22}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_{12} +$
$12\omega_6^2\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_9\omega_{12} + 24\omega_6^3\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_{12} + 10\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9 +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_{12} -$
$24\omega_6^2\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9 -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9 -$
$6\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^3\omega_5^3\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9 +$
$6\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 18\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_9\omega_{12} +$
$12\omega_6^3\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_{12} - 12\omega_6^2\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_3^2\omega_{18}\omega_9\omega_{12} -$
$60\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18}\omega_9 +$
$24\omega_6^2\omega_{22}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_{12} - 12\omega_6^3\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} +$
$24\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_9\omega_{12} +$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_{12} +$
$36\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_9\omega_{12} +$

$$12\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12} - 6\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9 + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$24\omega_6^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18}\omega_9 +$$
$$12\omega_6^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_{12} - 12\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9\omega_{12} +$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9 + 6\omega_6^3\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_9\omega_{12} -$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 36\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_{12} + 24\omega_6\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18} + 12\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_9\omega_{12} -$$
$$6\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} +$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_{12} - 36\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_9\omega_{12} + 24\omega_6\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9 - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{18} - 24\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_9\omega_{12} - 24\omega_6^3\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18}\omega_9 - 18\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18}\omega_{12} - 24\omega_6\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^2\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 60\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 48\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9\omega_{12} - 6\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_{12} +$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$42\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{18}\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_9\omega_{12} -$$
$$18\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9 +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{18} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9 - 18\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5^3v_2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_2^2\omega_9\omega_{12} + 24\omega_6^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{18}\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{18}\omega_9 -$$
$$12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^3v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_{12})\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = (12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 - 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_{12} -$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18}\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$6\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$

$$12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}v_1^2\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_9\omega_{12} -$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9 -$$
$$12\omega_6^2\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_{12} +$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}v_1^2\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2\omega_5\omega_{18}\omega_9\omega_{12} +$$
$$24\omega_6^3\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 18\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18} - 6\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9 +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9 -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$24\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$$
$$10\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9 +$$
$$24\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_{12} -$$
$$24\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2v_3^2\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$24\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} -$$
$$24\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_{12} +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}v_1^2\omega_5\omega_{18}\omega_9\omega_{12} +$$
$$24\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 24\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{18}\omega_9\omega_{12} +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_9\omega_{12} +$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_{12} +$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2v_3^2\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9 +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_9\omega_{12} + 6\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}v_1^2\omega_5v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{14}v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_7c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{12} +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9 +$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$24\omega_6^2\omega_{22}\omega_7\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18} -$$
$$12\omega_6^2\omega_{22}\omega_7c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_9\omega_{12} +$$
$$24\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} -$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9 + 12\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_2\omega_{18}\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}v_1^2\omega_5\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_5v_3^2\omega_{18}\omega_9\omega_{12} -$$
$$18\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_5^2\omega_{18}\omega_9\omega_{12} +$$

$12\omega_6^2\omega_{22}\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_{12} - 24\omega_6^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_{12} -$
$12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_{12} + 24\omega_6^2\omega_{22}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_5^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18} +$
$24\omega_6^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_7\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18}\omega_{12} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$
$6\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1^2\omega_5\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_{12} + 24\omega_6\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$18\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_7c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{18}\omega_9 +$
$12\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18} - 24\omega_6^3\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_{12} -$
$12\omega_6^3\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12} -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18}\omega_9\omega_{12} +$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_5v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{14}v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}v_1^2\omega_5^2v_3^2\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^2\omega_{22}\omega_{13}\omega_7\omega_{20}v_1\omega_5^2v_2v_3^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_9\omega_{12})\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = (-12\omega_3\omega_1^2\omega_2^3 - \omega_3\omega_{13}\omega_1^2\omega_2^3 - 2\omega_3\omega_{13}\omega_1^2\omega_2^2 + 12\omega_3\omega_1^2\omega_2^2 - 12\omega_1\omega_2^3 - 6\omega_{13}\omega_1\omega_2^3 + 24\omega_3\omega_{13}\omega_1^2\omega_2 - 24\omega_3\omega_{13}\omega_1^2 - 6\omega_{13}\omega_1^2\omega_2^2 -$
$2\omega_{13}\omega_1^2\omega_2^3 + 12\omega_3\omega_{13}\omega_1\omega_2 - 12\omega_3\omega_2^3 - 6\omega_3\omega_{13}\omega_1\omega_2^2 - 12\omega_3\omega_1\omega_2^2 + 12\omega_1^2\omega_2^3 + 24\omega_3\omega_1\omega_2^3 + 12\omega_{13}\omega_2^3 + 12\omega_{13}\omega_1^2\omega_2 - 12\omega_1^2\omega_2^2)\frac{c_s^4\rho}{12\omega_3\omega_{13}\omega_1^2\omega_2^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = (24\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2v_3^4 - 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2\omega_5\omega_2^2v_3^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 36\omega_3\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^2 -$
$216\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 - 24\omega_3\omega_4^2\omega_1^3\omega_5\omega_2v_3^4 + 24\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2 - 54\omega_3^2\omega_1^3\omega_5\omega_2^3v_3^4 + 36\omega_3\omega_4\omega_1^3\omega_5\omega_2^2v_3^2 -$
$72\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2v_3^2 + 48\omega_3^2\omega_4^2\omega_1^3\omega_5v_3^4 + 132\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1\omega_5\omega_2^3v_3^4 + 112\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 +$
$36\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 - 216\omega_3^2\omega_4^2c_s^2\omega_5\omega_2^3v_3^2 + 54\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^4 - 72\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 + 108\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3v_3^4 + 288\omega_3^2\omega_4c_s^2\omega_1\omega_5\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 -$
$54\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^3v_3^2 - 162\omega_3^2\omega_4c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 + 48\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2v_3^2 - 84\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2v_3^2 + 64\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2 - 6\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 -$
$36\omega_3\omega_4\omega_1^2\omega_5\omega_2^3v_3^2 - 216\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 + 108\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 - 72\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^2 + 180\omega_3\omega_4^2c_s^2\omega_1\omega_5\omega_2^3v_3^2 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 +$
$12\omega_3\omega_4^2\omega_1\omega_5\omega_2^3v_3^4 + 264\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_3^2 - 27\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 - 96\omega_3^2\omega_4^2\omega_5\omega_2^3v_3^4 + 240\omega_3^2\omega_4^2c_s^2\omega_5v_2^2\omega_2^3 - 72\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^4 - 4\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 -$
$108\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^2v_3^2 - 12\omega_3\omega_4^2\omega_1^2\omega_5\omega_2^2v_3^2 + 72\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3 + 60\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 - 18\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^2 + 24\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2 +$
$216\omega_3^2\omega_4^2\omega_5v_2^2\omega_2^2v_3^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 + 648\omega_3^2\omega_4c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 - 28\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 + 144\omega_3^2\omega_4\omega_1^2\omega_5\omega_2^3v_3^2 + 108\omega_3^2\omega_1^2\omega_5\omega_2^3v_3^4 +$
$24\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2 - 96\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2 + 54\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^2 + 108\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 + 336\omega_3\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^2 - 36\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^2v_3^2 -$
$72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2v_3^4 + 288\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^2 - 60\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 + 144\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2v_3^2 + 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 -$
$72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2v_3^2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 + 288\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 36\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^4 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2v_3^4 - 160\omega_3\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 +$
$12\omega_3\omega_4^2\omega_1^2\omega_5\omega_2^2v_3^4 - 180\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^3v_3^2 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 + 32\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5 + 18\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^4 + 64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2 - 216\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 -$
$144\omega_3^2\omega_4\omega_1^2\omega_5\omega_2^3v_3^4 + 24\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^2 - 168\omega_3^2\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^2 + 72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 + 180\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 -$
$108\omega_3^2\omega_4c_s^2\omega_1\omega_5\omega_2^3v_3^2 - 12\omega_3\omega_4^2\omega_1\omega_5\omega_2^3v_3^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_5\omega_2^3v_3^2 + 72\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^2 - 112\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 + 162\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 -$
$288\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 - 120\omega_3^2\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^3 - 288\omega_3^2\omega_4c_s^4\omega_1\omega_5\omega_2^3 -$
$72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 - 2\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 + 152\omega_3^2\omega_4^2c_s^4\omega_5\omega_2^3 + 36\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^2 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2v_3^2 -$
$24\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2v_3^2 - 9\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 - 108\omega_3^2\omega_1^2\omega_5\omega_2^3v_3^2 - 180\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 + 216\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 -$
$54\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^4 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 36\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^2v_3^4 - 56\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^2 - 162\omega_3^2c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 - 108\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 -$
$18\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^4 - 9\omega_3^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 - 348\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2v_3^2 + 132\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2v_3^2 + 48\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2 + 108\omega_3\omega_4c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 -$
$40\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5 - 36\omega_3^2\omega_4\omega_1\omega_5\omega_2^3v_3^2 - 648\omega_3^2\omega_4c_s^2\omega_1\omega_5v_2^2\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3\omega_5v_3^2 + 4\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 - 108\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 - 24\omega_3^2\omega_4^2\omega_5v_2^2\omega_2^3 +$
$324\omega_3^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 + 16\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 - 24\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2v_3^2 - 180\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2v_3^2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3^2\omega_4\omega_1^2\omega_5\omega_2^2v_3^4 -$
$72\omega_3^2\omega_4c_s^4\omega_1^3\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2 + 24\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^2 + 36\omega_3\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^4 - 288\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^2v_3^2 + 54\omega_3^2\omega_1^3\omega_5\omega_2^3v_3^2 + 264\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 -$
$36\omega_3\omega_4\omega_1^3\omega_5\omega_2^2v_3^4 - 6\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 54\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^3v_3^4 - 288\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2v_3^4 + 2\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 +$
$162\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 + 27\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 + 9\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 + 360\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^2v_3^2 + 36\omega_3\omega_4\omega_1^2\omega_5\omega_2^3v_3^4 - 6\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 -$
$88\omega_3^2\omega_4^2c_s^2\omega_5\omega_2^3 + 72\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^4 - 54\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^2 - 468\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 + 160\omega_3\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 + 300\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3v_3^2 -$
$48\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3v_3^2 - 108\omega_3\omega_4c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 + 9\omega_3^2\omega_4\omega_1^3v_1^4\omega_5\omega_2^3 - 72\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2v_3^2)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = (\omega^3v_1v_2^2 - 24c_s^2v_1 - 24v_1v_2^2 + 14\omega^2v_1^2v_2 - c_s^2\omega^3v_2 + 36\omega v_1v_2^2 + 36c_s^2\omega v_1 + 14c_s^2\omega^2v_2 - 36c_s^2\omega v_2 - 14c_s^2\omega^2v_1 - \omega^3v_1^2v_2 -$

$14\omega^2 v_1 v_2^2 + 24 v_1^2 v_2 + 24 c_s^2 v_2 + c_s^2 \omega^3 v_1 - 36\omega v_1^2 v_2) \frac{\rho v_3}{\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = (-2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2\omega_{18}^2 - 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_8 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9 +$
$3\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_{12} + 2\omega_6^3\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2 v_1\omega_5\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_8 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$4\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_{12} - 4\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1\omega_5 v_2^2\omega_{18}^2\omega_9 + 2\omega_6^3 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2 - 4\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1\omega_5 v_2^2\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_{12} +$
$2\omega_6^3 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2 +$
$2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9 -$
$2\omega_6^2\omega_{22}\omega_{13}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} +$
$\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2^2\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2 - 4\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1\omega_5 v_2^2\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} +$
$\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_9\omega_{12} - 6\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{22}\omega_{13}\omega_{14}\omega_8 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2 v_1\omega_5\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} +$
$\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2 v_1\omega_5 v_2^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9 + \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2 +$
$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 3\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1\omega_5\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18}^2\omega_9 + 5\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 6\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9 - 2\omega_6^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8 v_1\omega_5 v_2^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_{12} + \omega_6^3\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_{12} - \omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2 v_1\omega_5\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_{12} + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{22}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_{12} + 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5 v_2\omega_{18}^2\omega_9 +$
$2\omega_6^3\omega_{22}\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_8^2 v_1^2\omega_5 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_{12} -$
$\omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 3\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_{12} -$
$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{22}\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_{12} -$
$\omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 3\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_{12} -$
$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}\omega_{13}\omega_{20}\omega_8 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{13}\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}^2\omega_9)\frac{\rho v_3}{\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} =$
$(-2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5 v_2\omega_{18}\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8 v_1\omega_5 v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{20}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_9\omega_{12} +$

$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_{12} - 2\omega_{22}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_9\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}\omega_{14}v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_{12} +$
$2\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2\omega_{18}\omega_9 - 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} +$
$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1v_2^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_{12} + \omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9 - 2\omega_6\omega_{22}\omega_{13}\omega_{14}v_1v_2^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} -$
$\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5\omega_9\omega_{12} - 2\omega_{22}\omega_{13}\omega_{14}v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_2\omega_{18}\omega_9\omega_{12} -$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9 - 2\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} +$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_2\omega_{18}\omega_{12} - 2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_1\omega_{18}\omega_9\omega_{12} +$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18} +$
$2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_{18}\omega_9 - \omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_9\omega_{12} - 2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_5v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2\omega_{18} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_{18}\omega_9\omega_{12} +$
$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_{12} - 2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}v_1v_2^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_9\omega_{12} + 2\omega_{22}\omega_{13}\omega_{20}v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9 + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_{18}\omega_9 + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2v_2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} -$
$2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}c_s^2\omega_{20}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12} + 2\omega_6\omega_{22}\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18} + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_9\omega_{12} + 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} -$
$\omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2v_2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{20}v_1\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1v_2^2\omega_{18}\omega_9 + 2\omega_6\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_{12} -$
$2\omega_6\omega_{22}\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12} - 2\omega_{22}\omega_{13}\omega_{20}v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9 -$
$\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} -$
$2\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_9\omega_{12} +$
$\omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{14}v_1^2v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9 + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1v_2^2\omega_{18}\omega_9 +$
$2\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_9\omega_{12} +$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} + 2\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_9\omega_{12} - 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_{12} - 2\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18}\omega_{12} + 2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} -$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}v_1^2v_2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}\omega_{14}v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_2\omega_{18}\omega_9 + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12} +$
$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9 - \omega_6\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12} - 2\omega_{22}\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{12} - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1^2v_2\omega_{18}\omega_9 +$
$2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1v_2^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_2\omega_{18}\omega_9\omega_{12} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} -$
$2\omega_{22}\omega_{13}c_s^2\omega_{14}v_1\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2\omega_9\omega_{12} - 2\omega_{22}\omega_{13}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_9\omega_{12} -$
$2\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_2\omega_{18}\omega_9 - 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1^2v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18}\omega_{12} +$
$2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_{12} -$
$2\omega_6\omega_{22}\omega_{13}\omega_{14}v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_8v_1^2v_2\omega_{18}\omega_9 + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}v_1\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_9\omega_{12} +$
$2\omega_{22}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}v_1\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}v_1\omega_{18}\omega_9\omega_{12} -$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{14}\omega_8\omega_5v_2\omega_9\omega_{12} + 2\omega_6\omega_{22}\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_{12} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18}\omega_9 -$
$2\omega_6\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}\omega_9\omega_{12} + 2\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18}\omega_9\omega_{12})\frac{\rho v_3}{\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = (-13\omega_3\omega_1\omega_2^3v_3^2 - 24\omega_3c_s^2\omega_1\omega_2^2 + 10\omega_3\omega_1^3\omega_2 + 4\omega_1^2v_2^2\omega_2^2 - 20\omega_3\omega_1^2\omega_2^2 - 24\omega_3c_s^2\omega_1\omega_2^3 + 2\omega_1\omega_2^3 + 28\omega_3c_s^2\omega_1^3 + 12c_s^2\omega_1^2\omega_2^2 -$
$3\omega_3\omega_1v_2^2\omega_2^3 + 14\omega_3\omega_1^2\omega_2 + 26\omega_3c_s^2\omega_2^3 - 4\omega_3\omega_1\omega_2^2v_3^2 + 4\omega_3\omega_1^3v_2^2 - 6c_s^2\omega_1^3\omega_2 - 22\omega_3\omega_1^2\omega_2v_3^2 - 3\omega_3\omega_1^3v_2^2\omega_2 + 16\omega_3\omega_1^3v_3^2 - 4\omega_3\omega_1v_2^2\omega_2^2 -$
$6c_s^2\omega_1\omega_2^3 - 30\omega_3c_s^2\omega_1^2\omega_2 + 26\omega_3\omega_1^2\omega_2^2v_3^2 + 6\omega_3\omega_1^2v_2^2\omega_2^2 + 10\omega_3\omega_2^3v_3^2 - 10\omega_3\omega_2^3 - 4\omega_3\omega_1^2v_2^2\omega_2 - 13\omega_3\omega_1^3\omega_2v_3^2 + 8\omega_3\omega_1\omega_2^2 - 24\omega_3c_s^2\omega_1^3\omega_2 +$
$2\omega_1^3\omega_2 - 2\omega_1^3v_2^2\omega_2 - 12\omega_3\omega_1^3 + 10\omega_3\omega_1\omega_2^3 + 48\omega_3c_s^2\omega_1^2\omega_2^2 + 4\omega_3v_2^2\omega_2^3 - 2\omega_1v_2^2\omega_2^3 - 4\omega_1^2\omega_2^2)\frac{\rho v_2v_3}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-108\omega v_1v_2^2v_3^2 - 108c_s^2\omega v_1v_3^2 - 108c_s^2\omega v_1v_2^2 - 72c_s^2v_1^2v_3 - 42\omega^2v_1^2v_2^2v_3 - 72v_1^2v_2^2v_3 + 3c_s^2\omega^3v_2^2v_3 + 3\omega^3v_1^2v_2^2v_3 - 42c_s^2\omega^2v_1^2v_3 +$
$108c_s^2\omega v_2^2v_3 - 3c_s^2\omega^3v_1v_2^2 - 3c_s^2\omega^3v_1v_3^2 + 72c_s^2v_1v_3^2 + 72c_s^2v_1v_2^2 + 72v_1v_2^2v_3^2 + 42\omega^2v_1v_2^2v_3^2 - 42c_s^2\omega^2v_2^2v_3 + 2c_s^4\omega^3v_1 + 108c_s^2\omega v_1^2v_3 +$
$108\omega v_1^2v_2^2v_3 + 42c_s^2\omega^2v_1v_3^2 - 4c_s^4\omega^2v_1 - 72c_s^2v_2^2v_3 + 42c_s^2\omega^2v_1v_2^2 + 3c_s^2\omega^3v_1^2v_3 - 3\omega^3v_1v_2^2v_3^2)\frac{1}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-12\omega_6\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_{15} +$

$12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{15} - 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{18} - 12\omega_6^2\omega_7^2\omega_{20}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} +$
$6\omega_6^2\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} - 6\omega_6\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7^2\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} -$
$3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{18}\omega_{15} + 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$
$6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_2^2v_3\omega_{18}\omega_{15} + 12\omega_6\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_{15} + 6\omega_6^2\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{18} +$
$2\omega_6^2\omega_7^2c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} - 12\omega_6\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} + 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{15} + 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} +$
$12\omega_6\omega_7^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{18} - 6\omega_6^2\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} +$
$24\omega_6^2\omega_7^2c_s^4\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5v_2^2v_3\omega_{18} + 12\omega_6\omega_7^2c_s^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1^2\omega_5v_3\omega_{18}\omega_{15} -$
$12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 28\omega_6^2\omega_7c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} + 6\omega_6\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 3\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} -$
$12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{18}\omega_{15} + 6\omega_6\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 12\omega_6\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + 6\omega_6^2\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} +$
$12\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3\omega_{18}\omega_{15} - 24\omega_7c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} +$
$6\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} + 6\omega_6\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8v_1^2\omega_5^2v_3^2\omega_{18}\omega_{15} - 12\omega_6\omega_7^2c_s^2\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} +$
$6\omega_6\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{15} + 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{18} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5v_2^2v_3\omega_{18}\omega_{15} - 3\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{18} -$
$12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5v_2^2v_3\omega_{18} - 24\omega_6^2\omega_7^2c_s^4\omega_{20}\omega_{17}v_1\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5v_3\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18} +$
$6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} + 24\omega_7^2c_s^4\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{18}\omega_{15} + 3\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} -$
$12\omega_6\omega_7^2c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{18}\omega_{15} - 6\omega_6\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{15} -$
$6\omega_6^2\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18} - 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{15} - 6\omega_6\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 12\omega_6\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} +$
$48\omega_6\omega_7c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} + 12\omega_6\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 24\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_{5}\omega_{18}\omega_{15} +$
$6\omega_6\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} - 12\omega_6^2\omega_7^2\omega_{20}\omega_8v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_2^2v_3^2\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} -$
$12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{18}\omega_{15} + 12\omega_6\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} -$
$48\omega_6\omega_7^2c_s^4\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{18}\omega_{15} + 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{18} + 12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_3\omega_{18}\omega_{15} +$
$6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_2^2v_3\omega_{18} - 6\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + 24\omega_6\omega_7^2c_s^4\omega_{20}\omega_{17}v_1\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} -$
$6\omega_6\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_2^2\omega_{18} + 6\omega_6^2\omega_7^2\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 12\omega_6\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2v_2^2v_3\omega_{18}\omega_{15} +$
$3\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18} + 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_{15} - 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} + 6\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} -$
$12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{18}\omega_{15} - 24\omega_6c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} - 12\omega_6\omega_7^2c_s^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} +$
$6\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5v_2^2v_3\omega_{18}\omega_{15} - 12\omega_6\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 12\omega_6\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} + 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} +$
$6\omega_6\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} - 12\omega_6\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} + 24\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} +$
$12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{15} + 6\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 24\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} +$
$6\omega_6\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5v_2^2\omega_{18} - 12\omega_6\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} +$
$12\omega_6^2\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7^2\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} -$
$6\omega_6^2\omega_7^2\omega_{17}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7^2c_s^2\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} + 6\omega_6^2\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{18} - 12\omega_6\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2\omega_{18}\omega_{15} -$
$6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{15} + 12\omega_6\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} +$
$6\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} + 6\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_2^2v_3\omega_{18} +$
$12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2v_3\omega_{18} - 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_{15} + 6\omega_6\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} +$
$6\omega_6\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} - 12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} + 6\omega_6\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} +$
$24\omega_6^2\omega_7^2c_s^4\omega_{20}\omega_{17}\omega_8v_1\omega_{18}\omega_{15} - 24\omega_6^2\omega_7c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} -$
$12\omega_6\omega_7^2\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} + 12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2v_2^2v_3\omega_{18}\omega_{15} - 6\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} - 48\omega_6^2\omega_7^2c_s^4\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18}\omega_{15} +$
$12\omega_6^2\omega_7^2\omega_{17}\omega_8v_1^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 3\omega_6^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} - 12\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_8^2v_1^2\omega_5v_3\omega_{18} - 6\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} +$
$12\omega_6\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2v_2^2v_3\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{18}\omega_{15} - 12\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 6\omega_6\omega_7^2c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{18}\omega_{15} +$
$12\omega_6\omega_7^2c_s^2\omega_{20}\omega_{17}v_1^2v_3\omega_{18}\omega_{15} - 6\omega_6\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18} + 12\omega_6\omega_7\omega_{17}v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} - 12\omega_6\omega_7\omega_{20}\omega_8v_1^2v_2^2v_3\omega_{18} -$
$3\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{18} + 6\omega_7\omega_{20}\omega_8v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} + 12\omega_7c_s^2\omega_{20}v_1\omega_5v_2^2\omega_{18}\omega_{15} - 12\omega_7c_s^2\omega_{17}\omega_5v_2^2v_3\omega_{18}\omega_{15} - 12\omega_7\omega_{17}v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} -$
$6\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} - 12\omega_6\omega_7c_s^2\omega_{20}v_1^2\omega_5v_3\omega_{18}\omega_{15} - 12\omega_7c_s^2\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} - 6\omega_6\omega_7c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{18}\omega_{15} +$
$12\omega_6\omega_7c_s^2\omega_{17}v_1^2\omega_5v_3\omega_{18}\omega_{15} + 12\omega_7c_s^2\omega_{20}v_1\omega_5v_3^2\omega_{18}\omega_{15} + 6\omega_6\omega_7\omega_{17}\omega_8v_1^2v_2^2v_3\omega_{18}\omega_{15} + 6\omega_6\omega_7\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} + 12\omega_7\omega_{20}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} +$
$3\omega_6\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} + 6\omega_6\omega_7\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7\omega_{20}\omega_8v_1v_2^2v_3^2\omega_{18} - 6\omega_6\omega_7c_s^2\omega_{17}\omega_8v_1v_2^2\omega_{18}\omega_{15} +$
$6\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{18} + 6\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1v_2^2\omega_{18}\omega_{15} - 12\omega_6\omega_7c_s^2\omega_{20}v_1\omega_5v_3^2\omega_{18}\omega_{15} + 6\omega_6\omega_7c_s^2\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} +$
$6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} - 12\omega_7c_s^2\omega_{17}v_1^2\omega_5v_3\omega_{18}\omega_{15} - 3\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3\omega_{15} - 6\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{18}\omega_{15} -$
$12\omega_6\omega_7\omega_{20}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} - 12\omega_7c_s^2\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{15} - 12\omega_7\omega_{20}\omega_{17}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} + 6\omega_6\omega_7c_s^2\omega_{17}\omega_8v_2^2v_3\omega_{18}\omega_{15} -$
$12\omega_7\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} - 12\omega_6\omega_7c_s^2\omega_{20}v_1^2v_3\omega_{18}\omega_{15} - 12\omega_6\omega_7\omega_{20}\omega_8v_1v_2^2v_3^2\omega_{18}\omega_{15} + 12\omega_7c_s^2\omega_{20}\omega_{17}v_1^2\omega_5v_3\omega_{18}\omega_{15} +$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} =$$

$(6\omega_6\omega_7c_s^2\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7c_s^2\omega_{20}\omega_{17}v_2^2v_3\omega_{18}\omega_{15} - 3\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} - 12\omega_6\omega_7\omega_{20}\omega_{17}v_1v_2^2v_3^2\omega_{18}\omega_{15} +$
$6\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5v_3\omega_{18}\omega_{15} + 12\omega_7c_s^2\omega_{20}\omega_{17}\omega_5v_2^2v_3\omega_{18}\omega_{15} + 12\omega_6\omega_7c_s^2\omega_{20}v_1v_3^2\omega_{18}\omega_{15} + 6\omega_6\omega_7\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} -$
$12\omega_6\omega_7c_s^2\omega_{20}\omega_{17}v_1v_2^2\omega_{18}\omega_{15} + 3\omega_6\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18} - 6\omega_6\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18} - 6\omega_6\omega_7\omega_{20}\omega_8v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} -$
$6\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} - 12\omega_6\omega_7c_s^2\omega_{20}v_1\omega_5v_2^2\omega_{18}\omega_{15} + 6\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7c_s^2\omega_{17}\omega_5v_2^2v_3\omega_{18}\omega_{15} -$
$6\omega_6\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5v_3\omega_{18}\omega_{15} - 6\omega_6\omega_7c_s^2\omega_{17}\omega_5v_2^2\omega_{18}\omega_{15} - 12\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_5v_2^2v_3\omega_{18}\omega_{15} - 6\omega_6\omega_7\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18} +$
$6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{15} - 12\omega_6\omega_7c_s^2\omega_{20}\omega_8v_2^2v_3\omega_{18} - 12\omega_7\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} - 12\omega_7c_s^2\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} +$
$12\omega_6\omega_7c_s^2\omega_{20}\omega_{17}v_1^2v_3\omega_{18}\omega_{15} - 6\omega_6\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{18} + 12\omega_6\omega_7\omega_{17}v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} - 12\omega_6\omega_7\omega_{20}\omega_8v_1^2v_2^2v_3\omega_{18} -$
$3\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{18} + 6\omega_7\omega_{20}\omega_8v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} + 12\omega_7c_s^2\omega_{20}v_1\omega_5v_2^2\omega_{18}\omega_{15} - 12\omega_7c_s^2\omega_{17}\omega_5v_2^2v_3\omega_{18}\omega_{15} - 12\omega_7\omega_{17}v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} -$
$6\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} - 12\omega_6\omega_7c_s^2\omega_{20}v_1^2\omega_5v_3\omega_{18}\omega_{15} - 12\omega_7c_s^2\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} - 6\omega_6\omega_7c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{18}\omega_{15} +$
$12\omega_6\omega_7c_s^2\omega_{17}v_1^2\omega_5v_3\omega_{18}\omega_{15} + 12\omega_7c_s^2\omega_{20}v_1\omega_5v_3^2\omega_{18}\omega_{15} + 6\omega_6\omega_7\omega_{17}\omega_8v_1^2v_2^2v_3\omega_{18}\omega_{15} + 6\omega_6\omega_7\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} + 12\omega_7\omega_{20}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} +$
$3\omega_6\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{18}\omega_{15} + 6\omega_6\omega_7\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7\omega_{20}\omega_8v_1v_2^2v_3^2\omega_{18} - 6\omega_6\omega_7c_s^2\omega_{17}\omega_8v_1v_2^2\omega_{18}\omega_{15} +$
$6\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{18} + 6\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1v_2^2\omega_{18}\omega_{15} - 12\omega_6\omega_7c_s^2\omega_{20}v_1\omega_5v_3^2\omega_{18}\omega_{15} + 6\omega_6\omega_7c_s^2\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} +$
$6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} - 12\omega_7c_s^2\omega_{17}v_1^2\omega_5v_3\omega_{18}\omega_{15} - 3\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3\omega_{15} - 6\omega_6\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{18}\omega_{15} -$
$12\omega_6\omega_7\omega_{20}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} - 12\omega_7c_s^2\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{18}\omega_{15} - 12\omega_7\omega_{20}\omega_{17}v_1\omega_5v_2^2v_3^2\omega_{18}\omega_{15} + 6\omega_6\omega_7c_s^2\omega_{17}\omega_8v_2^2v_3\omega_{18}\omega_{15} -$
$12\omega_7\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} - 12\omega_6\omega_7c_s^2\omega_{20}v_1^2v_3\omega_{18}\omega_{15} - 12\omega_6\omega_7\omega_{20}\omega_8v_1v_2^2v_3^2\omega_{18}\omega_{15} + 12\omega_7c_s^2\omega_{20}\omega_{17}v_1^2\omega_5v_3\omega_{18}\omega_{15} +$

$3\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{15} + 6\omega_7 c_s^2\omega_{20}\omega_8\omega_5 v_2^2 v_3\omega_{18}\omega_{15} - 12\omega_6\omega_7\omega_{20} v_1^2 v_2^2 v_3\omega_{18}\omega_{15} + 6\omega_6\omega_7 c_s^2\omega_{20}\omega_8 v_1^2\omega_5 v_3\omega_{18} +$
$12\omega_6\omega_7\omega_{20}\omega_{17} v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_{15} - 4\omega_6 c_s^4\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{18}\omega_{15} - 12\omega_6\omega_7 c_s^2\omega_{20} v_2^2 v_3\omega_{18}\omega_{15} + 6\omega_6\omega_7 c_s^2\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_{15} -$
$6\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2 v_3\omega_{18}\omega_{15} - 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_{15} + 6\omega_6\omega_7 c_s^2\omega_{17}\omega_8 v_1^2 v_3\omega_{18}\omega_{15} + 12\omega_6\omega_7 c_s^2\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_{15} +$
$12\omega_6\omega_7\omega_{17} v_1 v_2^2 v_3^2\omega_{18}\omega_{15} - 12\omega_6\omega_7 c_s^2\omega_{20}\omega_{17} v_1 v_2^2\omega_{18}\omega_{15} + 6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2 v_3\omega_{15} - 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{18} -$
$12\omega_6\omega_7\omega_{17} v_1^2 v_2^2 v_3\omega_{18}\omega_{15} - 6\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_{15} - 12\omega_6\omega_7 c_s^2\omega_{17} v_2^2 v_3\omega_{18}\omega_{15} - 12\omega_6\omega_7\omega_{17} v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_{15} +$
$12\omega_7\omega_{17}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{15} - 6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{15} + 12\omega_6\omega_7 c_s^2\omega_{17} v_1 v_2^2\omega_{18}\omega_{15} + 12\omega_7\omega_{17}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{18}\omega_{15} + 12\omega_7 c_s^2\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} +$
$12\omega_6\omega_7\omega_{20} v_1 v_2^2 v_3^2\omega_{18}\omega_{15} + 12\omega_7\omega_{17} v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_{15} + 2\omega_6\omega_7 c_s^4\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{18}\omega_{15} + 6\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{15} -$
$12\omega_7 c_s^2\omega_{20}\omega_{17} v_1\omega_5 v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7\omega_{20}\omega_8 v_1^2 v_2^2 v_3\omega_{18}\omega_{15} + 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2 v_3\omega_{18}\omega_{15} + 12\omega_6\omega_7 c_s^2\omega_{20}\omega_8 v_1^2 v_3\omega_{18}\omega_{15} +$
$3\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} - 6\omega_7\omega_{20}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_{15} - 6\omega_6\omega_7 c_s^2\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} + 12\omega_6\omega_7 c_s^2\omega_{20}\omega_8 v_1 v_3^2\omega_{18} -$
$6\omega_6\omega_7\omega_{17}\omega_8 v_1\omega_5 v_3^2 v_3^2\omega_{15} - 6\omega_6\omega_7 c_s^2\omega_{17}\omega_8\omega_5 v_2^2 v_3\omega_{18}\omega_{15} + 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{15} - 6\omega_6\omega_7 c_s^2\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{15} +$
$12\omega_6\omega_7 c_s^2\omega_{20}\omega_8 v_1 v_2^2\omega_{18} + 6\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2 v_2^2 v_3\omega_{18} - 6\omega_6\omega_7\omega_{17}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{18}\omega_{15} + 12\omega_7 c_s^2\omega_{17} v_1\omega_5 v_3^2\omega_{18}\omega_{15} -$
$6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{18}\omega_{15} - 12\omega_6\omega_7 c_s^2\omega_{17} v_1^2 v_3\omega_{18}\omega_{15} + 12\omega_6\omega_7 c_s^2\omega_{20} v_1^2\omega_5 v_3\omega_{18}\omega_{15} + 6\omega_6\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5 v_2^2\omega_{18}\omega_{15} -$
$6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} - 12\omega_6\omega_7 c_s^2\omega_{20}\omega_8 v_1^2 v_3\omega_{18} + 6\omega_6\omega_7\omega_{20}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_{15} - 6\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2 v_2^2 v_3\omega_{18}\omega_{15} +$
$12\omega_7 c_s^2\omega_{17}\omega_8\omega_5 v_2^2 v_3\omega_{18}\omega_{15} + 12\omega_6\omega_7 c_s^2\omega_{20}\omega_8 v_2^2 v_3\omega_{18}\omega_{15} + 12\omega_7 c_s^2\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{15} + 6\omega_7\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_{15} -$
$12\omega_7 c_s^2\omega_{20} v_1^2\omega_5 v_3\omega_{18}\omega_{15} - 6\omega_6\omega_7\omega_{17}\omega_8 v_1 v_2^2 v_3^2\omega_{18}\omega_{15} - 3\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{15} - 12\omega_6\omega_7 c_s^2\omega_{17} v_1\omega_5 v_3^2\omega_{18}\omega_{15} -$
$12\omega_6\omega_7 c_s^2\omega_{20}\omega_8 v_1 v_2^2\omega_{18}\omega_{15} + 12\omega_6\omega_7 c_s^2\omega_{20}\omega_{17} v_1\omega_5 v_3^2\omega_{18}\omega_{15} + 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{18} + 6\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2 v_3\omega_{18} -$
$6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2 v_3\omega_{18}\omega_{15} + 12\omega_6\omega_7 c_s^2\omega_{20}\omega_{17} v_1\omega_5 v_2^2\omega_{18}\omega_{15} - 12\omega_6\omega_7 c_s^2\omega_{20}\omega_8 v_1 v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7 c_s^2\omega_{20}\omega_5 v_2^2 v_3\omega_{18}\omega_{15} +$
$6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} - 12\omega_6\omega_7 c_s^2\omega_{17} v_1\omega_5 v_2^2\omega_{18}\omega_{15} - 6\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_2^2\omega_{18} + 12\omega_7 c_s^2\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{18}\omega_{15} -$
$12\omega_7 c_s^2\omega_{20}\omega_5 v_2^2 v_3\omega_{18}\omega_{15} + 12\omega_7 c_s^2\omega_{17} v_1\omega_5 v_2^2\omega_{18}\omega_{15} - 12\omega_6\omega_7\omega_{20}\omega_{17} v_1^2\omega_5 v_2^2 v_3\omega_{18}\omega_{15} - 3\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{18} -$
$6\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 v_1 v_2^2 v_3^2\omega_{18} + 6\omega_6\omega_7 c_s^2\omega_{20}\omega_8\omega_5 v_2^2 v_3\omega_{18} + 6\omega_6\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_{15} + 6\omega_6\omega_7 c_s^2\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} -$
$12\omega_7\omega_{20} v_1^2\omega_5 v_2^2 v_3\omega_{18}\omega_{15} - 12\omega_7 c_s^2\omega_{20}\omega_{17} v_1\omega_5 v_2^2\omega_{18}\omega_{15} - 3\omega_6\omega_7\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{18}\omega_{15} - 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} -$
$6\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_3^2\omega_{18} + 6\omega_6\omega_7\omega_{20}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{18} + 12\omega_6\omega_7\omega_{20} v_1^2\omega_5 v_2^2 v_3\omega_{18}\omega_{15} - 12\omega_7 c_s^2\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} +$
$12\omega_7\omega_{20}\omega_{17} v_1^2\omega_5 v_2^2 v_3\omega_{18}\omega_{15} - 6\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_{15} + 12\omega_6\omega_7\omega_{20}\omega_{17} v_1^2 v_2^2 v_3\omega_{18}\omega_{15} + 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{18}\omega_{15} +$
$12\omega_6\omega_7 c_s^2\omega_{17} v_1 v_3^2\omega_{18}\omega_{15} - 6\omega_6\omega_7 c_s^2\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{18}\omega_{15} + 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{18})\frac{1}{12\omega_6\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-2+\omega_3)\frac{c_s^4 v_1}{6\omega_3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (3\omega_1 v_2^2 + 3\omega_1 v_3^2 - 3v_2^2\omega_2 - 2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 - 3\omega_2 v_3^2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2)\frac{c_s^2 v_1}{36\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_1} = (2c_s^2\omega^3 v_1 v_3 + 14c_s^2\omega^2 v_3^2 + 14c_s^2\omega^2 v_2^2 + 24v_2^2 v_3^2 - \omega^3 v_2^2 v_3^2 - c_s^2\omega^3 v_2^2 - 36\omega v_2^2 v_3^2 - c_s^2\omega^3 v_3^2 - 8c_s^4 + 72\omega v_1 v_2^2 v_3 + 72c_s^2\omega v_1 v_3 +$
$2\omega^3 v_1 v_2^2 v_3 + 14\omega^2 v_2^2 v_3^2 + 24c_s^2 v_3^2 + 24c_s^2 v_2^2 + 12c_s^4\omega - 28c_s^2\omega^2 v_1 v_3 - 4c_s^4\omega^2 - 48v_1 v_2^2 v_3 - 28\omega^2 v_1 v_2^2 v_3 - 36c_s^2\omega v_3^2 - 36c_s^2\omega v_2^2 - 48c_s^2 v_1 v_3)\frac{\rho}{4\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_1} = (4\omega_6^2 c_s^2\omega_{20}\omega_8\omega_5^3 v_3^2\omega_{18}\omega_{15} + 4\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_5^2 v_3^2\omega_{18}\omega_{15} - 2\omega_6^3\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{15} + 2\omega_6^3 c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 4\omega_6^3 c_s^2\omega_{20}\omega_8^2 v_1\omega_5^3 v_3\omega_{18} -$
$2\omega_6^3 c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^2 c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} - \omega_6^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{18}\omega_{15} - 2\omega_6^3 c_s^2\omega_{20}\omega_8^2\omega_5^3 v_3^2\omega_{18} - 2\omega_6^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{18} +$
$4\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_3^2\omega_{18}\omega_{15} - 2\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{18} - 2\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{15} + 4\omega_6 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3 v_2^2\omega_{18}\omega_{15} +$
$8\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_3^2\omega_{18}\omega_{15} - 4\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_5^3 v_2^2\omega_{18}\omega_{15} - 2\omega_6^3 c_s^2\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_{15} - 2\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{18} - 2\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_3^2\omega_{15} -$
$8\omega_6^3\omega_{20}\omega_{17}\omega_8 v_1\omega_5^3 v_2^2 v_3\omega_{18}\omega_{15} - 8\omega_6^3 c_s^2\omega_{17}\omega_8 v_1\omega_5^2 v_3\omega_{18}\omega_{15} - 4\omega_6^3 c_s^4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 8\omega_6^2\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{18}\omega_{15} +$
$4\omega_6^3 c_s^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{18}\omega_{15} - 8\omega_6^2 c_s^2\omega_{20}\omega_8 v_1\omega_5^3 v_3\omega_{18}\omega_{15} + 6\omega_6 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{18}\omega_{15} - 4\omega_6^3 c_s^2\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{18}\omega_{15} -$
$4\omega_6^3\omega_{20}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2 v_3^2\omega_{18}\omega_{15} - 2\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_3^2\omega_{18} - 12\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3 v_2^2\omega_{18}\omega_{15} -$
$4\omega_6^3\omega_{20}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_{18}\omega_{15} - 8\omega_6 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_3^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2\omega_{20}\omega_8^2\omega_5^3 v_3^2\omega_{18}\omega_{15} - 4\omega_6^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} +$
$2\omega_6^3\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{20}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{18}\omega_{15} + 4\omega_6^3 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{18}\omega_{15} + 6\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5 v_3^2\omega_{18}\omega_{15} -$
$4\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_3^2\omega_{18}\omega_{15} - 8\omega_6^3\omega_{20}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} - 4\omega_6^3 c_s^2\omega_{17}\omega_8\omega_5^3 v_2^2\omega_{18}\omega_{15} - 16\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3 v_3^2\omega_{18}\omega_{15} -$
$2\omega_6^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{15} - 4\omega_6 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_{15} + 4\omega_6^3 c_s^2\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} - 2\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{15} +$
$4\omega_6^2 c_s^2\omega_{20}\omega_8^2 v_1\omega_5^3 v_3\omega_{18}\omega_{15} - 2\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_3^2\omega_{15} + 4\omega_6^3 c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^3\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} + 8\omega_6^3 c_s^2\omega_{17}\omega_8 v_1\omega_5^3 v_3\omega_{18}\omega_{15} -$
$8\omega_6^2 c_s^2\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{15} - 4\omega_6^3\omega_{17}\omega_8\omega_5^3 v_2^2 v_3^2\omega_{18}\omega_{15} + 4\omega_6^3\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{15} - 2\omega_6 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{20}\omega_8\omega_5^3 v_2^2 v_3^2\omega_{18}\omega_{15} +$
$4\omega_6^3\omega_{20}\omega_8\omega_5^2 v_6^2 v_3^2\omega_{18}\omega_{15} + 8\omega_6^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5^3 v_2^2 v_3\omega_{18}\omega_{15} + 8\omega_6^3\omega_{17}\omega_8 v_1\omega_5^3 v_2^2 v_3\omega_{18}\omega_{15} - 4\omega_6^3 c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} -$
$8\omega_6^2\omega_{20}\omega_8 v_1\omega_5^3 v_2^2 v_3\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{18}\omega_{15} - 2\omega_6^3 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^3 c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} +$
$4\omega_6^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{18} - 4\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_5^3 v_3^2\omega_{18}\omega_{15} - 2\omega_6^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{15} + 8\omega_6 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3 v_2^2\omega_{18}\omega_{15} +$
$4\omega_6^3\omega_{20}\omega_{17}\omega_8\omega_5^3 v_2^2 v_3^2\omega_{18}\omega_{15} + 8\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{15} + 2\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_3^2\omega_{18}\omega_{15} +$
$4\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_5^2 v_2^2\omega_{18}\omega_{15} + 2\omega_6^3 c_s^2\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{18}\omega_{15} - 12\omega_6^2 c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{18} + 8\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2\omega_{18}\omega_{15} -$
$4\omega_6^3 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} - 8\omega_6^3\omega_{17}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} - 4\omega_6^3 c_s^2\omega_{20}\omega_8^2\omega_5^2 v_3^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5 v_3^2\omega_{18}\omega_{15} - 8\omega_6^3\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{18} -$
$2\omega_6^3\omega_{20}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{18} + 8\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3 v_2^2\omega_{18}\omega_{15} + 4\omega_6^3\omega_{17}\omega_8\omega_5^2 v_2^2 v_3^2\omega_{18}\omega_{15} + 4\omega_6^3 c_s^2\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{15} + 4\omega_6^2\omega_{17}\omega_8\omega_5^3 v_2^2 v_3^2\omega_{18}\omega_{15} -$
$8\omega_6^2\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{15} - 4\omega_6^3\omega_{20}\omega_8\omega_5^3 v_2^2 v_3^2\omega_{18}\omega_{15} + 4\omega_6^3 c_s^4\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + 2\omega_6^2 c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^3\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{18}\omega_{15} +$
$8\omega_6^3 c_s^2\omega_{20}\omega_8 v_1\omega_5^3 v_3\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_3^2\omega_{15} + 4\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{18} - 2\omega_6^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_{18} +$
$8\omega_6^2 c_s^2\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{18}\omega_{15} - 12\omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2 v_3^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{20}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{18}\omega_{15} + \omega_6^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_3^2\omega_{18} +$
$4\omega_6^2 c_s^2\omega_{17}\omega_8\omega_5^3 v_2^2\omega_{18}\omega_{15} + 8\omega_6^3 c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} - 4\omega_6^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{18}\omega_{15} + \omega_6^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{15} + 2\omega_6^3 c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$

$$2\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18} + \omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{18} + 4\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6^3c_s^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 8\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^3v_3\omega_{18}\omega_{15} +$$
$$2\omega_6^3c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_5^3v_3^2\omega_{18}\omega_{15} + 4\omega_6^3c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{15} +$$
$$2\omega_6^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{18}\omega_{15} - 8\omega_6^3c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3\omega_{18} - 4\omega_6^3\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} + 8\omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} -$$
$$\omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{18}\omega_{15} + 4\omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18} + 2\omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{18}\omega_{15} + 2\omega_6^3c_s^4\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} +$$
$$4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_5^3v_2^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + \omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - \omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_{15} +$$
$$4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3^2\omega_{18} + 4\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - 2\omega_6^3c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{18}\omega_{15} - 4\omega_6^3c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} -$$
$$4\omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{18}\omega_{15} + 2\omega_6^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} + 2\omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_{15} -$$
$$4\omega_6^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_2^2v_3^2\omega_{18}\omega_{15} - 8\omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^3v_3\omega_{18}\omega_{15} - 4\omega_6^3c_s^2\omega_{20}\omega_8\omega_5^3v_3^2\omega_{18}\omega_{15} - 8\omega_6^2\omega_{17}\omega_8v_1\omega_5^3v_2^2v_3\omega_{18}\omega_{15} +$$
$$8\omega_6^3\omega_{20}\omega_8v_1\omega_5^3v_2^2v_3\omega_{18}\omega_{15} + 4\omega_6^3\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} + 4\omega_6c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 16\omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{18}\omega_{15} +$$
$$2\omega_6^2\omega_{20}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{18}\omega_{15} + 4\omega_6^3\omega_{20}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{18} + 2\omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{18}\omega_{15} - 2\omega_6^3\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} + 2\omega_6^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{18}\omega_{15} -$$
$$4\omega_6^3c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_3\omega_{18}\omega_{15} - 8\omega_6^2c_s^2\omega_{17}\omega_8v_1\omega_5^3v_3\omega_{18}\omega_{15} + 8\omega_6^3\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} - 8\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_2^2\omega_{18}\omega_{15} +$$
$$\omega_6^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{18} - 8\omega_6^3c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} + 8\omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_3^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} - 4\omega_6^2c_s^4\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} +$$
$$8\omega_6^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + \omega_6^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} - 2\omega_6^3c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15})\frac{\rho}{4\omega_6^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1} = (2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} - 4\omega_6^2c_s^2\omega_{17}\omega_5^2v_3^2\omega_{18}\omega_{15} +$$
$$\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} + 8\omega_6c_s^2\omega_{20}\omega_{17}v_1\omega_5^2v_3\omega_{18}\omega_{15} - \omega_6^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} + 4\omega_6\omega_{17}\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 8\omega_6\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} +$$
$$4\omega_6c_s^2\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} - 8\omega_6^2c_s^2\omega_{17}v_1\omega_5v_3\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{17}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{15} + 8\omega_6\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_5v_2^2\omega_{18}\omega_{15} +$$
$$4\omega_6^2\omega_{20}\omega_5v_2^2v_3^2\omega_{18}\omega_{15} - 8\omega_6c_s^2\omega_{17}v_1\omega_5^2v_3\omega_{18}\omega_{15} - 2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5v_3^2\omega_{18}\omega_{15} + 8\omega_6^2\omega_{17}v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + \omega_6^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} -$$
$$2\omega_6\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} + 2\omega_6^2c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{18}\omega_{15} - 2\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{18} + 4\omega_6^2\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18} + 2\omega_6\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} -$$
$$8\omega_6^2c_s^2\omega_{20}\omega_{17}v_1\omega_5^2v_3\omega_{18}\omega_{15} + 2\omega_6^2c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18} + 4\omega_6^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18} + 4\omega_6c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 2\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} +$$
$$4\omega_6c_s^2\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} - 4\omega_6c_s^4\omega_{20}\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{20}\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 8\omega_6^2\omega_{17}v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} - \omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{15} -$$
$$2\omega_6^2\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} - 2\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} + \omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_5v_2^2\omega_{18}\omega_{15} + 4\omega_6c_s^2\omega_{20}\omega_5^2v_3^2\omega_{18}\omega_{15} -$$
$$4\omega_6c_s^2\omega_{20}\omega_{17}\omega_5^2v_2^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{18} -$$
$$8\omega_6^2c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} - 8\omega_6c_s^2\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} + 4\omega_6c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_5v_3^2\omega_{18}\omega_{15} + 4\omega_6c_s^2\omega_{20}\omega_5^2v_2^2\omega_{18}\omega_{15} -$$
$$8\omega_6^2\omega_{20}\omega_{17}v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} - 2\omega_6^2c_s^4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{20}\omega_{17}\omega_5^2v_3^2\omega_{18}\omega_{15} - 2\omega_6^2c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18} + 4\omega_6^2c_s^4\omega_{20}\omega_5^2v_3^2\omega_{18}\omega_{15} +$$
$$\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{18} - 8\omega_6\omega_{20}v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 4\omega_6c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{15} - 2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} -$$
$$\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{18} + 8\omega_6^2c_s^2\omega_{20}v_1\omega_5^2v_3\omega_{18}\omega_{15} - 2\omega_6^2\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_5v_3^2\omega_{18}\omega_{15} -$$
$$4\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{18}\omega_{15} - 2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{18}\omega_{15} + 8\omega_6\omega_{20}\omega_{17}v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + \omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{18} +$$
$$4\omega_6c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} + 2\omega_6^2c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{15} + 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{18}\omega_{15} - 2\omega_6^2c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{18} + 4\omega_6^2c_s^4\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} +$$
$$8\omega_6^2\omega_{20}\omega_{17}v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} + 2\omega_6c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} - 4\omega_6^2c_s^2\omega_{17}\omega_5^2v_2^2\omega_{18}\omega_{15} +$$
$$\omega_6^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} - 4\omega_6^2c_s^4\omega_{17}\omega_5\omega_{18}\omega_{15} + 2\omega_6c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6\omega_{20}\omega_{17}\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 4\omega_6^2c_s^4\omega_{20}\omega_5\omega_{18}\omega_{15} +$$
$$2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{15} + 4\omega_6c_s^4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2c_s^4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6^2\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - 4\omega_6^2c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_{15} -$$
$$4\omega_6^2\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18} + 2\omega_6^2\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 2\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{18}\omega_{15} -$$
$$8\omega_6\omega_{17}v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} - 2\omega_6\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} + 8\omega_6^2c_s^2\omega_{17}v_1\omega_5^2v_3\omega_{18}\omega_{15} - 4\omega_6^2c_s^2\omega_{20}\omega_5^2v_2^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} -$$
$$8\omega_6^2c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{18} + 4\omega_6^2c_s^2\omega_{17}\omega_5v_3^2\omega_{18}\omega_{15} - 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} - 4\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} - 4\omega_6^2c_s^2\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} -$$
$$2\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{18} - 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 2\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3^2\omega_{18} - 8\omega_6^2\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{18} + 4\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} +$$
$$4\omega_6\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 4\omega_6c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_5^2v_2^2\omega_{18}\omega_{15} - 12\omega_6c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6c_s^2\omega_{17}\omega_5^2v_2^2\omega_{18}\omega_{15} +$$
$$8\omega_6c_s^2\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} + 8\omega_6^2\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} + 2\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^4\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} +$$
$$8\omega_6^2c_s^2\omega_{20}\omega_{17}v_1\omega_5v_3\omega_{18}\omega_{15} + 4c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18} - 4\omega_6^2\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{18}\omega_{15} -$$
$$4\omega_6^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} - 2\omega_6^2c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18} + 2\omega_6^2c_s^4\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6c_s^2\omega_{17}\omega_5^2v_3^2\omega_{18}\omega_{15} -$$
$$4\omega_6\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} + 8\omega_6^2\omega_{20}v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} - 2\omega_6c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} + 2\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{18}\omega_{15} - 4\omega_6^2c_s^4\omega_{20}\omega_8\omega_5\omega_{18} +$$
$$2\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} - 4\omega_6^2\omega_{17}\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 4\omega_6c_s^4\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} -$$
$$4\omega_6\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 8\omega_6^2c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} - 4\omega_6^2\omega_{20}\omega_{17}\omega_5v_2^2v_3^2\omega_{18}\omega_{15} - 4\omega_6c_s^4\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} -$$
$$2\omega_6^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 4\omega_6^2c_s^2\omega_{20}\omega_{17}\omega_5^2v_3^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2\omega_{17}\omega_5v_2^2\omega_{18}\omega_{15} + 4\omega_6\omega_{20}\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{18} -$$
$$2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 4\omega_6^2\omega_{20}\omega_{17}\omega_5^2v_2^2v_3^2\omega_{18}\omega_{15} - 8\omega_6^2\omega_{20}v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{18}\omega_{15} -$$
$$8\omega_6c_s^2\omega_{20}v_1\omega_5^2v_3\omega_{18}\omega_{15} - 4\omega_6^2c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{17}\omega_5v_2^2v_3^2\omega_{18}\omega_{15} - 8\omega_6^2c_s^2\omega_{20}v_1\omega_5v_3\omega_{18}\omega_{15} - 2\omega_6c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{18}\omega_{15} +$$
$$4\omega_6\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} - 4\omega_6^2c_s^2\omega_{20}\omega_5^2v_3^2\omega_{18}\omega_{15} + 4\omega_6c_s^4\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15})\frac{\rho}{4\omega_6^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1} = (-\omega_{13}\omega_1\omega_2 + 2\omega_1\omega_2^2 - 2\omega_1\omega_2 + 2\omega_1^2\omega_2 - \omega_1^2 + \omega_{13}\omega_2 + \omega_{13}\omega_1 - \omega_2^2 - \omega_1^2\omega_2^2)\frac{c_s^4\rho}{\omega_{13}\omega_1^2\omega_2^2}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1} = (-6\omega_3^2\omega_1^2\omega_5v_2^2 - 8\omega_3^2\omega_4c_s^2\omega_1^2\omega_5 - 18\omega_4^2c_s^2\omega_1^2\omega_5v_3^2 + 8\omega_3\omega_4^2c_s^4\omega_1\omega_5 + 6\omega_4^2\omega_1^2\omega_5v_3^2 - 12\omega_3^2\omega_4c_s^2\omega_1\omega_5v_3^2 - 12\omega_3^2\omega_4c_s^2\omega_1\omega_5v_2^2 +$$
$$6\omega_4^2\omega_1^2\omega_5v_2^2 - 6\omega_3^2\omega_1^2\omega_5v_3^2 - 18\omega_4^2c_s^2\omega_1^2\omega_5v_2^2 - 2\omega_3^2\omega_4c_s^4\omega_1^3\omega_5 - 6\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_3^2 - 3\omega_3\omega_4^2\omega_1^3\omega_5v_3^4 - 6\omega_3^2\omega_4\omega_1^2\omega_5v_2^4 + 16\omega_3^2\omega_4^2c_s^4\omega_5 +$$
$$18\omega_3^2c_s^2\omega_1^2\omega_5v_3^2 + 18\omega_3^2c_s^2\omega_1^2\omega_5v_2^2 - 3\omega_3\omega_4^2\omega_1^3\omega_5v_2^4 - 6\omega_3^2\omega_4\omega_1^2\omega_5v_3^4 - 8\omega_3^2\omega_4^2c_s^4\omega_1\omega_5 - 6\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2 - 3\omega_3^2\omega_4\omega_1^3\omega_5v_2^2 - 6\omega_3\omega_4^2\omega_1^2\omega_5v_3^2 +$$
$$8\omega_3^2\omega_4c_s^4\omega_1^2\omega_5 + 12\omega_3\omega_4^2c_s^2\omega_1\omega_5v_2^2 - 8\omega_3\omega_4^2c_s^2\omega_1\omega_5 + 2\omega_3^2\omega_4c_s^2\omega_1^3\omega_5 + 12\omega_3\omega_4^2c_s^2\omega_1\omega_5v_3^2 - 3\omega_3^2\omega_4\omega_1^3\omega_5v_3^2 - 6\omega_3\omega_4^2\omega_1^2\omega_5v_2^2 - 3\omega_3^2\omega_1^3\omega_5v_2^4 +$$
$$6\omega_3^2\omega_4c_s^2\omega_1^3\omega_5v_2^2 + 3\omega_4^2\omega_1^3\omega_5v_3^4 + 3\omega_4^2\omega_1^3\omega_5v_2^4 + 6\omega_3^2\omega_4c_s^2\omega_1^3\omega_5v_3^2 - 3\omega_3^2\omega_1^3\omega_5v_3^4 - 9\omega_3^2c_s^2\omega_1^3\omega_5v_2^2 + 6\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_2^2 + 6\omega_3\omega_4^2\omega_1^2\omega_5v_2^4 +$$
$$3\omega_3^2\omega_4\omega_1^3\omega_5v_3^4 + 6\omega_3\omega_4^2\omega_1^2\omega_5v_3^4 + 3\omega_3^2\omega_4\omega_1^3\omega_5v_2^4 + 6\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_3^2 - 9\omega_3^2c_s^2\omega_1^3\omega_5v_3^2 - 3\omega_4^2\omega_1^3\omega_5v_2^2 - 8\omega_3^2\omega_4c_s^4\omega_1\omega_5 + 3\omega_3^2\omega_1^3\omega_5v_3^2 +$$

$8\omega_3\omega_4^2c_s^2\omega_1^2\omega_5 + 9\omega_4^2c_s^2\omega_1^3\omega_5v_2^2 + 2\omega_3\omega_4^2c_s^4\omega_1^3\omega_5 + 3\omega_3^2\omega_1^3\omega_5v_2^2 + 9\omega_4^2c_s^2\omega_1^3\omega_5v_3^2 - 3\omega_4^2\omega_1^3\omega_5v_3^2 - 32\omega_3^2\omega_4^2c_s^4\omega_1 - 6\omega_3^2\omega_4c_s^2\omega_1^2\omega_5v_3^2 - 6\omega_4^2\omega_1^2\omega_5v_2^4 + 6\omega_3^2\omega_1^2\omega_5v_3^4 + 32\omega_3^2\omega_4^2c_s^4\omega_1^2 + 6\omega_3^2\omega_1^2\omega_5v_2^4 - 6\omega_4^2\omega_1^2\omega_5v_3^4 - 6\omega_3^2\omega_4c_s^2\omega_1^2\omega_5v_2^2 - 8\omega_3^2\omega_4^2c_s^4\omega_1^3 + 8\omega_3^2\omega_4c_s^2\omega_1\omega_5 + 6\omega_3^2\omega_4\omega_1^2\omega_5v_3^2 + 3\omega_3\omega_4^2\omega_1^3\omega_5v_2^2 - 8\omega_3\omega_4^2c_s^4\omega_1^2\omega_5 - 2\omega_3\omega_4^2c_s^2\omega_1^3\omega_5 + 6\omega_3^2\omega_4\omega_1^2\omega_5v_2^2 + 3\omega_3\omega_4^2\omega_1^3\omega_5v_3^2)\frac{\rho}{8\omega_3^2\omega_4^2\omega_1^3\omega_5}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = (-\omega^3v_1v_3^2 + c_s^2\omega^3v_3 - 14\omega^2v_1^2v_3 + 24c_s^2v_1 + 24v_1v_3^2 - 36c_s^2\omega v_1 - 14c_s^2\omega^2v_3 - 36\omega v_1v_3^2 + 14c_s^2\omega^2v_1 + \omega^3v_1^2v_3 + 36c_s^2\omega v_3 - 24v_1^2v_3 + 14\omega^2v_1v_3^2 - c_s^2\omega^3v_1 - 24c_s^2v_3 + 36\omega v_1^2v_3)\frac{\rho v_2}{2\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = (-\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{18} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_3\omega_{18} + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_{15} -$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_3\omega_{18}\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + \omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} -$
$2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{18}\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2v_3\omega_{18}\omega_{15} - 3\omega_6^2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^2v_3\omega_{18} + 6\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} - 4\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5v_3\omega_{18} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2v_3\omega_{18}\omega_{15} +$
$2\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{18} +$
$4\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_3\omega_{18} - 8\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_3\omega_{18}\omega_{15} + 3\omega_6^2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}v_1\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{18}\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} - 4\omega_6^2\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{18}\omega_{15} -$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + 2\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} +$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} - 2\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - \omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5v_3\omega_{18} +$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{18}\omega_{15} - 2\omega_6\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{18}\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5v_3\omega_{18}\omega_{15} -$
$4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 4\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{18}\omega_{15} +$
$4\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}v_1\omega_5\omega_{18}\omega_{15} - 4\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2v_3\omega_{18}\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{18} +$
$2\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18}\omega_{15} - \omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{18} - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 2\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{18}\omega_{15} -$
$\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 2\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_3\omega_{18}\omega_{15} - 2\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8v_1\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{18}\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} + \omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{18} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{18}\omega_{15} -$
$\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{18} + \omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} +$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8v_1\omega_5\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{18}\omega_{15} + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_{18}\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_{18}\omega_{15} -$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_1\omega_5v_3^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{18}\omega_{15} + \omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$
$6\omega_6^2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{18}\omega_{15} + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_3\omega_{18}\omega_{15} - 2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}v_1\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{18} - 2\omega_6\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_3\omega_{18} - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3\omega_{18}\omega_{15} -$
$4\omega_6\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2v_3\omega_{18}\omega_{15} + 2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5v_3\omega_{18}\omega_{15} - \omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2v_1\omega_5\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8v_1\omega_5^2v_3^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5v_3^2\omega_{18} - 10\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18}\omega_{15})\frac{\rho v_2}{2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = (-4\omega_6c_s^2\omega_{17}v_1\omega_5\omega_{18}\omega_{15} + 4\omega_{20}v_1\omega_5v_3^2\omega_{18}\omega_{15} - 4c_s^2\omega_{17}\omega_5v_3\omega_{18}\omega_{15} + 4c_s^2\omega_{20}\omega_{17}\omega_5v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{17}v_1v_3^2\omega_{18}\omega_{15} +$
$2\omega_6\omega_{20}\omega_{17}\omega_8v_1^2v_3\omega_{18} - 4\omega_{20}\omega_{17}v_1\omega_5v_3^2\omega_{18}\omega_{15} - 4\omega_{17}v_1^2\omega_5v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{20}\omega_{17}v_1\omega_5v_3^2\omega_{18}\omega_{15} - 4\omega_6\omega_{20}\omega_8v_1v_3^2\omega_{18}\omega_{15} +$
$\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18} - 4\omega_6c_s^2\omega_{20}\omega_{17}\omega_5v_3\omega_{18}\omega_{15} - 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_{18} - \omega_6\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{18} - 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_3\omega_{18}\omega_{15} +$
$4\omega_6c_s^2\omega_{17}v_1\omega_{18}\omega_{15} - 2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} - 2c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18}\omega_{15} + 2\omega_6c_s^2\omega_{17}\omega_8\omega_5v_3\omega_{15} - 2\omega_6\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} + 2\omega_6c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18}\omega_{15} -$
$4\omega_6c_s^2\omega_{20}v_3\omega_{18}\omega_{15} + \omega_6\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + 2\omega_6c_s^2\omega_{17}\omega_8\omega_5v_3\omega_{15} - 2\omega_6\omega_{20}\omega_{17}\omega_8v_1v_3^2\omega_{18} - 4\omega_6\omega_{17}v_1^2v_3\omega_{18}\omega_{15} -$
$2\omega_6c_s^2\omega_{17}\omega_8\omega_5v_3\omega_{18}\omega_{15} - 2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{18}\omega_{15} - \omega_6\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{18}\omega_{15} - \omega_6\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} + 4\omega_6\omega_{20}\omega_8v_1^2v_3\omega_{18}\omega_{15} -$
$2\omega_6\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + 4c_s^2\omega_{17}\omega_8\omega_5v_3\omega_{18}\omega_{15} - 2\omega_6c_s^2\omega_{17}\omega_8v_1\omega_{18}\omega_{15} + 2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} - 4\omega_6c_s^2\omega_{20}\omega_8v_3\omega_{18} + 4\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{18}\omega_{15} +$

$2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_{15} + \omega_6 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_3\omega_{18}\omega_{15} - 4\omega_6\omega_{20}\omega_8 v_1^2 v_3\omega_{18} - 2\omega_6\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{18}\omega_{15} + \omega_6\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{18} +$
$4\omega_6 c_s^2\omega_{20}\omega_8 v_3\omega_{18}\omega_{15} - 2\omega_6 c_s^2\omega_{20}\omega_8 v_1\omega_5\omega_{18} + 4\omega_6 c_s^2\omega_{20}\omega_5 v_3\omega_{18}\omega_{15} - 4\omega_6 c_s^2\omega_{20}\omega_{17} v_1\omega_{18}\omega_{15} - 4\omega_6\omega_{17} v_1\omega_5 v_3^2\omega_{18}\omega_{15} -$
$2c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{15} + 4c_s^2\omega_{20} v_1\omega_5\omega_{18}\omega_{15} + 4\omega_6\omega_{20}\omega_8 v_1 v_3^2\omega_{18} + 4c_s^2\omega_{17}\omega_8 v_1\omega_5\omega_{15} - 2\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_{15} + \omega_6 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{15} +$
$2\omega_6\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_{15} + 4\omega_6\omega_{20} v_1^2\omega_5 v_3\omega_{18}\omega_{15} - 2\omega_6\omega_{20}\omega_8 v_1^2\omega_5 v_3\omega_{18}\omega_{15} - 4c_s^2\omega_{20}\omega_{17} v_1\omega_5\omega_{18}\omega_{15} - 4\omega_6\omega_{20} v_1\omega_5 v_3^2\omega_{18}\omega_{15} +$
$2\omega_6\omega_{20}\omega_{17}\omega_8 v_1 v_3^2\omega_{18}\omega_{15} + 4c_s^2\omega_{17} v_1\omega_5\omega_{18}\omega_{15} + 4\omega_6 c_s^2\omega_{20}\omega_{17} v_3\omega_{18}\omega_{15} + 4\omega_6 c_s^2\omega_{20}\omega_{17} v_1\omega_5\omega_{18}\omega_{15} + 2\omega_{20}\omega_8 v_1^2\omega_5 v_3\omega_{18}\omega_{15} +$
$4\omega_6\omega_{17} v_1^2\omega_5 v_3\omega_{18}\omega_{15} + 4\omega_6 c_s^2\omega_{17}\omega_5 v_3\omega_{18}\omega_{15} + 4\omega_6 c_s^2\omega_{20}\omega_8 v_1\omega_{18} + 2\omega_6\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_{15} + 2c_s^2\omega_{20}\omega_8\omega_5 v_3\omega_{18}\omega_{15} +$
$2\omega_6\omega_{17}\omega_8 v_1^2 v_3\omega_{18}\omega_{15} - 4\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{18}\omega_{15} - 2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{18}\omega_{15} + 2\omega_6 c_s^2\omega_{17}\omega_8 v_3\omega_{18}\omega_{15} + 2\omega_6 c_s^2\omega_{20}\omega_8\omega_5 v_3\omega_{18} -$
$4\omega_6\omega_{20}\omega_{17} v_1 v_3^2\omega_{18}\omega_{15} - 2\omega_6 c_s^2\omega_{20}\omega_8\omega_5 v_3\omega_{18}\omega_{15} - 4\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} - \omega_6 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_3\omega_{15} - 4\omega_6\omega_{20} v_1^2 v_3\omega_{18}\omega_{15} + 2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_3\omega_{15} -$
$4\omega_6 c_s^2\omega_{20}\omega_8 v_1\omega_{18}\omega_{15} + \omega_6\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{18}\omega_{15} + 2\omega_6\omega_{20}\omega_8 v_1^2\omega_5 v_3\omega_{18} - 4c_s^2\omega_{17}\omega_8\omega_5 v_3\omega_{15} - \omega_6 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{18}\omega_{15} -$
$4\omega_6 c_s^2\omega_{17} v_3\omega_{18}\omega_{15} - 2\omega_6\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{18} + 2\omega_6 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_{18}\omega_{15} + 4\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} + 2c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{18}\omega_{15} -$
$2\omega_6\omega_{20}\omega_{17}\omega_8 v_1^2 v_3\omega_{18}\omega_{15} - \omega_6 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_3\omega_{18} + 2\omega_6 c_s^2\omega_{17}\omega_8 v_1\omega_5\omega_{18}\omega_{15} + 4\omega_6 c_s^2\omega_{20} v_1\omega_{18}\omega_{15} - 4c_s^2\omega_{17}\omega_8 v_1\omega_5\omega_{18}\omega_{15} -$
$4\omega_6\omega_{20}\omega_{17} v_1^2\omega_5 v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{20} v_1 v_3^2\omega_{18}\omega_{15} - 4c_s^2\omega_{20}\omega_5 v_3\omega_{18}\omega_{15} + 4\omega_{20}\omega_{17} v_1^2\omega_5 v_3\omega_{18}\omega_{15} + 4\omega_{17} v_1\omega_5 v_3^2\omega_{18}\omega_{15} + 2\omega_6 c_s^2\omega_{20}\omega_{17}\omega_8 v_3\omega_{18} -$
$2\omega_6 c_s^2\omega_{17}\omega_8 v_1\omega_5\omega_{15} - 2\omega_6\omega_{17}\omega_8 v_1 v_3^2\omega_{18}\omega_{15} - 4\omega_6 c_s^2\omega_{20} v_1\omega_5\omega_{18}\omega_{15} - 4\omega_{20} v_1^2\omega_5 v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{20}\omega_{17} v_1^2 v_3\omega_{18}\omega_{15})\frac{\rho v_2}{2\omega_6\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{\rho v_1 v_2}{36\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (-2c_s^2\omega^3 v_1 v_3 - 14c_s^2\omega^2 v_2^2 + 36c_s^2\omega v_1^2 - 14\omega^2 v_1^2 v_2^2 + c_s^2\omega^3 v_2^2 - 24c_s^2 v_1^2 - 72\omega v_1 v_2^2 v_3 - 72c_s^2\omega v_1 v_3 - 2\omega^3 v_1 v_2^2 v_3 + 36\omega v_1^2 v_2^2 +$
$c_s^2\omega^3 v_1^2 - 24c_s^2 v_2^2 + 28c_s^2\omega^2 v_1 v_3 - 24v_1^2 v_2^2 + 48v_1 v_2^2 v_3 + 28\omega^2 v_1 v_2^2 v_3 - 14c_s^2\omega^2 v_1^2 + 36c_s^2\omega v_2^2 + \omega^3 v_1^2 v_2^2 + 48c_s^2 v_1 v_3)\frac{\rho}{4\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (-4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{18} + 4\omega_6\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{18}\omega_{15} + 8\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 v_1\omega_5 v_2^2 v_3\omega_{18}\omega_{15} -$
$2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2 v_2^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 v_2^2\omega_{18} - 8\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_5 v_3\omega_{18}\omega_{15} +$
$4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 v_2^2\omega_{18}\omega_{15} + 4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5\omega_{18} - 8\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} - 4\omega_6\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} +$
$8\omega_6\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} + 8\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18}\omega_{15} - 2\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8 v_1^2\omega_5\omega_{18}\omega_{15} + 4\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_5^2 v_3\omega_{18}\omega_{15} - 8\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18}\omega_{15} +$
$8\omega_6\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18} -$
$4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{15} - 8\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8 v_1^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{15} -$
$\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 v_2^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_{15} +$
$\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{18}\omega_{15} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} + 8\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8 v_1\omega_5 v_3\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} - 8\omega_6^2\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5 v_2^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8 v_1^2\omega_5 v_2^2\omega_{18}\omega_{15} - 8\omega_6^2\omega_{19} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_{15} + 12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_5^2 v_3\omega_{18}\omega_{15} +$
$8\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} - 4\omega_6^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18}\omega_{15} +$
$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18}\omega_{15} - 4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8 v_1^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18}\omega_{15} -$
$\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{18} - 4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2 v_2^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 v_2^2\omega_{18} -$
$8\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} - 4\omega_6\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8 v_1^2\omega_5^2 v_2^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{18}\omega_{15} +$
$8\omega_6\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} + 4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} +$
$8\omega_6\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} + 8\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11} v_1\omega_5 v_3\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{15} + 8\omega_6^2\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8 v_1\omega_5 v_2^2 v_3\omega_{18}\omega_{15} +$
$2\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 v_2^2\omega_{15} + 4\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5 v_2^2\omega_{18}\omega_{15} +$
$4\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_5 v_3\omega_{18}\omega_{15} - 8\omega_6^2\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} +$
$4\omega_6^2\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 v_2^2\omega_{15} - 6\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3\omega_{18}\omega_{15} - 4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8 v_1^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11} v_1\omega_5^2 v_3\omega_{18}\omega_{15} +$
$2\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5\omega_{18}\omega_{15} + 4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_{15} -$
$8\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_5 v_2^2 v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8\omega_5 v_2^2\omega_{18}\omega_{15} -$
$20\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_5^2 v_3\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2 v_2^2\omega_{18}\omega_{15} + 8\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} -$
$4\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} - \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{18} + 8\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2\omega_5^2 v_2^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{18} + \omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 v_2^2\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5 v_2^2\omega_{18}\omega_{15} - 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{18}\omega_{15} - 8\omega_6\omega_{19} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} -$
$8\omega_6\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18}\omega_{15} -$
$\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 v_2^2\omega_{18} + 4\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{18}\omega_{15} +$
$8\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5\omega_{18} + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{18}\omega_{15} -$

$4\omega_6\omega_{19}\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5v_2^2\omega_{18} + 4\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_5^2v_2^2\omega_{18}\omega_{15} + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{18}\omega_{15} -$
$2\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1^2\omega_5\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} -$
$8\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} - \omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{15} + 8\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18}\omega_{15} -$
$16\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} - 4\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} + 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18}\omega_{15} +$
$4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8v_1^2\omega_5^2v_2^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{15} +$
$8\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} - 4\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5^2v_2^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} - 8\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} - 4\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5v_3\omega_{18}\omega_{15} -$
$4\omega_6\omega_{19}\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{15} - 4\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18}\omega_{15} - 4\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{18}\omega_{15} -$
$2\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18}\omega_{15} - 4\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{15} - 4\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5^2v_3\omega_{18}\omega_{15} -$
$8\omega_6\omega_{19}\omega_7^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 8\omega_6^2\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} +$
$4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{17}\omega_{11}\omega_8v_1^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}v_1\omega_5^2v_3\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5v_2^2\omega_{18}\omega_{15} + 4\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18}\omega_{15} -$
$\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} - 4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{18} +$
$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1^2\omega_5^2\omega_{18})\frac{\rho}{4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3} = (\omega_6\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{18}\omega_{15} - 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{18} - 4\omega_6\omega_{20}v_1^2v_2^2\omega_{18}\omega_{15} -$
$\omega_6c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{18} + 4\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3\omega_{18}\omega_{15} - 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18}\omega_{15} + 2\omega_6\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18} - 2\omega_6c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_{15} -$
$4\omega_6c_s^2\omega_{20}v_1^2\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{20}\omega_{17}v_1^2\omega_5\omega_{18}\omega_{15} - 2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{18}\omega_{15} + 2\omega_6c_s^2\omega_{17}\omega_8v_2^2\omega_{18}\omega_{15} + 2\omega_6\omega_{17}\omega_8v_1^2v_2^2\omega_{18}\omega_{15} +$
$2c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18}\omega_{15} + 4c_s^2\omega_{20}\omega_{17}v_1^2\omega_5\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{17}\omega_8v_1v_3\omega_{18}\omega_{15} - 4c_s^2\omega_{17}v_1^2\omega_5\omega_{18}\omega_{15} + 4\omega_6\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} +$
$4\omega_6c_s^2\omega_{17}\omega_5v_2^2\omega_{18}\omega_{15} + 4\omega_6c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{17}v_1^2\omega_5v_2^2\omega_{18}\omega_{15} + 4c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} - 8\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} -$
$4\omega_6\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{18} + 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18} + 2\omega_{20}\omega_8v_1^2\omega_5v_2^2\omega_{18}\omega_{15} - 8\omega_6\omega_{20}\omega_{17}v_1v_2^2v_3\omega_{18}\omega_{15} + 4\omega_6c_s^2\omega_{20}\omega_{17}v_2^2\omega_{18}\omega_{15} -$
$2\omega_6\omega_{20}\omega_8v_1^2\omega_5v_2^2\omega_{18}\omega_{15} + 2\omega_6c_s^2\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 8\omega_6c_s^2\omega_{20}v_1v_3\omega_{18}\omega_{15} - 8c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} - 8\omega_6c_s^2\omega_{20}\omega_{17}v_1v_3\omega_{18}\omega_{15} +$
$4c_s^2\omega_{17}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} - 4\omega_{20}v_1^2\omega_5v_2^2\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{20}\omega_8v_1^2\omega_{18} + 4\omega_6\omega_{20}\omega_{17}v_1^2v_2^2\omega_{18}\omega_{15} + 8\omega_6\omega_{17}v_1v_2^2v_3\omega_{18}\omega_{15} -$
$8\omega_{20}\omega_{17}v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} - 2c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} - 2\omega_6c_s^2\omega_{17}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} + 8\omega_6\omega_{20}\omega_8v_1v_2^2v_3\omega_{18} + 4\omega_{20}\omega_{17}v_1^2\omega_5v_2^2\omega_{18}\omega_{15} +$
$8\omega_6\omega_{20}\omega_{17}v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} + \omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} - 8\omega_6\omega_{20}\omega_8v_1v_2^2v_3\omega_{18}\omega_{15} - 4c_s^2\omega_{20}\omega_5v_2^2\omega_{18}\omega_{15} - 4\omega_6\omega_{20}\omega_{17}v_1^2\omega_5v_2^2\omega_{18}\omega_{15} -$
$4c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_6\omega_{20}\omega_8v_1^2\omega_5v_2^2\omega_{18} + 2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 8\omega_6\omega_{20}v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3\omega_{18}\omega_{15} +$
$8c_s^2\omega_{20}v_1\omega_5v_3\omega_{18}\omega_{15} - 2\omega_6\omega_{20}\omega_{17}\omega_8v_1^2v_2^2\omega_{18}\omega_{15} + 2\omega_6\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + 8\omega_{20}v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} - 8\omega_6c_s^2\omega_{20}v_1\omega_5v_3\omega_{18}\omega_{15} +$
$4\omega_6c_s^2\omega_{20}v_1^2\omega_5\omega_{18}\omega_{15} - \omega_6c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 4\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 2\omega_6c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{18} + 4\omega_6c_s^2\omega_{20}\omega_8v_1^2\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{17}v_2^2\omega_{18}\omega_{15} -$
$4\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + 2\omega_6c_s^2\omega_{17}\omega_8v_1^2\omega_{18}\omega_{15} - 8c_s^2\omega_{20}\omega_{17}v_1\omega_5v_3\omega_{18}\omega_{15} - 8\omega_6c_s^2\omega_{17}v_1\omega_5v_3\omega_{18}\omega_{15} + 8\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} +$
$8c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} + 8\omega_6c_s^2\omega_{20}\omega_8v_1v_3\omega_{18} - 4\omega_6\omega_{20}\omega_8v_1^2v_2^2\omega_{18} - 4\omega_6\omega_{17}\omega_8v_1v_2^2v_3\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{20}v_2^2\omega_{18}\omega_{15} + 8c_s^2\omega_{17}v_1\omega_5v_3\omega_{18}\omega_{15} -$
$4\omega_6\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} - 4c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 4\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{20}\omega_8v_2^2\omega_{18} - 4\omega_6c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} +$
$2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 8\omega_6c_s^2\omega_{20}\omega_{17}v_1\omega_5v_3\omega_{18}\omega_{15} + 4\omega_6\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} + 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} + 4\omega_6c_s^2\omega_{17}v_1^2\omega_5\omega_{18}\omega_{15} -$
$\omega_6\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{20}\omega_{17}\omega_5v_2^2\omega_{18}\omega_{15} - 2\omega_6c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} + 8\omega_6\omega_{20}v_1v_2^2v_3\omega_{18}\omega_{15} -$
$4\omega_{17}v_1^2\omega_5v_2^2\omega_{18}\omega_{15} + 4c_s^2\omega_{20}\omega_{17}\omega_5v_2^2\omega_{18}\omega_{15} + 2c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} + 2\omega_6c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{18} - 4c_s^2\omega_{17}\omega_5v_2^2\omega_{18}\omega_{15} +$
$4\omega_6c_s^2\omega_{20}\omega_{17}v_1^2\omega_{18}\omega_{15} + 8\omega_{17}v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} - \omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 8\omega_6\omega_{17}v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} - 4c_s^2\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$2c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 4\omega_6\omega_{20}v_1^2\omega_5v_2^2\omega_{18}\omega_{15} + 2\omega_6\omega_{20}\omega_{17}\omega_8v_1^2v_2^2\omega_{18} + 8\omega_6c_s^2\omega_{17}v_1v_3\omega_{18}\omega_{15} + 4\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} -$
$4\omega_6\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3\omega_{18} - \omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{18} + 4\omega_6c_s^2\omega_{20}\omega_5v_2^2\omega_{18}\omega_{15} + 4\omega_6c_s^2\omega_{20}\omega_8v_2^2\omega_{18}\omega_{15} - 4c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} -$
$2\omega_6\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{18}\omega_{15} + 2\omega_6c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 2\omega_6\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18}\omega_{15} + \omega_6c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{18}\omega_{15} + 4\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{18}\omega_{15} -$
$4c_s^2\omega_{20}v_1^2\omega_5\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{17}v_1^2\omega_{18}\omega_{15} + 2\omega_6\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 8\omega_6c_s^2\omega_{20}\omega_8v_1v_3\omega_{18}\omega_{15} + 4\omega_6c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{18}\omega_{15} +$
$4c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{18}\omega_{15} + 4\omega_6\omega_{20}\omega_8v_1^2v_2^2\omega_{18}\omega_{15} - 4\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3\omega_{18} + 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18} - \omega_6\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{18} -$
$2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{18}\omega_{15} + 2\omega_6c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{18} - 2\omega_6c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{18}\omega_{15} - 4\omega_6\omega_{17}v_1^2v_2^2\omega_{18}\omega_{15})\frac{\rho}{4\omega_6\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3} = (\omega_1v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2v_3^2 - 3c_s^2\omega_2)\frac{\rho v_1v_3}{36\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (24 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 3c_s^2\omega^3 + 36\omega v_3^2 - 42c_s^2\omega^2 - 36\omega - 14\omega^2v_3^2 - 72c_s^2 + \omega^3v_3^2 - 24v_3^2)\frac{c_s^2v_3}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (36\omega_6^3\omega_{22}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_9 + 48\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}^2\omega_9 + 12\omega_6^3c_s^2\omega_{11}^2\omega_{18}^2\omega_9 +$
$6\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2 + 12\omega_6^2\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}\omega_9 + 9\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2\omega_9 - 48\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2 +$
$12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2 - 12\omega_6^2\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 + 36\omega_6^2\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}^2\omega_9 + 36\omega_6^2\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}\omega_9 + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 +$
$12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2\omega_9 + 15\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9 -$
$36\omega_6^2\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 + 144\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}\omega_9 - 9\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{11}^2v_1^2\omega_{18}^2 - 12\omega_6^3c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_9 -$

$$3\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}\omega_9 + 36\omega_6^3c_s^4\omega_{11}^2\omega_{18}^2 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2 -$$
$$6\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_9 - 18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{11}v_1^2v_3^2\omega_{18}^2 - 15\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9 +$$
$$6\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18}\omega_9 + 24\omega_6\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}\omega_{11}v_1^2\omega_{18}^2\omega_9 + 12\omega_6^3\omega_{22}\omega_{11}v_1^2\omega_{18}^2 - 18\omega_6^3\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9 -$$
$$12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_9 + 54\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18} + 156\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 - 36\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2 +$$
$$72\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2 + 36\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2 - 5\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 +$$
$$18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2 + 36\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 12\omega_6^3c_s^2\omega_{11}^2\omega_{18}^2 + 15\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}\omega_9 -$$
$$108\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}\omega_9 - 36\omega_6^3\omega_{22}c_s^2\omega_{11}v_1^2\omega_{18}^2 - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{11}^2v_1^2v_3^2\omega_{18}^2\omega_9 -$$
$$6\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 + 36\omega_6^2c_s^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9 + 12\omega_6^3c_s^2\omega_{11}^2v_3^2\omega_{18}^2 -$$
$$12\omega_6^2\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 42\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9 - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_9 - 18\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}\omega_9 +$$
$$6\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 - 18\omega_6^3\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}^2\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 -$$
$$36\omega_6^3c_s^4\omega_{11}^2\omega_{18}^2\omega_9 + 36\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18} + 36\omega_6^3c_s^2\omega_{11}^2v_1^2\omega_{18}^2 - 12\omega_6^2\omega_{13}\omega_{11}^2v_1^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18} + 12\omega_6^3\omega_{11}^2v_1^2v_3^2\omega_{18}^2 -$$
$$12\omega_6^2\omega_{22}c_s^2\omega_{11}v_3^2\omega_{18}^2\omega_9 - 72\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_9 + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 -$$
$$24\omega_6\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 + 12\omega_6^2c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}c_s^2\omega_{11}v_3^2\omega_{18}^2 - 36\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9 -$$
$$6\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}\omega_9 + 18\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 3\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 - 60\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 -$$
$$18\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 + 18\omega_6^3\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9 + 12\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{11}v_1^2v_3^2\omega_{18}^2\omega_9 -$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_9 + 5\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 - 24\omega_6\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9 + 27\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 +$$
$$6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2 - 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_9 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 - 36\omega_6^3c_s^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 +$$
$$24\omega_6\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}\omega_9 - 45\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2 + 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_9 -$$
$$96\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2\omega_9 - 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 -$$
$$6\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{22}\omega_{11}v_1^2v_3^2\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_9 - 12\omega_6^3\omega_{11}^2v_1^2v_3^2\omega_{18}^2\omega_9 - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 -$$
$$15\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{11}v_3^2\omega_{18}^2\omega_9 - 72\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18} -$$
$$12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2 - 12\omega_6^2\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 + 3\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 +$$
$$72\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 - 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 - 36\omega_6^2\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{11}v_1^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}\omega_9 +$$
$$12\omega_6^3\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}\omega_9)\frac{v_3}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (-12\omega_6^2\omega_{22}\omega_{18}^2\omega_9 - 12\omega_6\omega_{22}v_3^2\omega_{18}^2\omega_9 + 12\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 - 36\omega_6\omega_{22}c_s^2\omega_{18}^2\omega_9 + 6\omega_6^2\omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_9 -$$
$$36\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_9 - 36\omega_6^2c_s^2\omega_{11}\omega_{18}^2\omega_9 + 36\omega_6^2\omega_{22}c_s^2\omega_{18}^2\omega_9 - 6\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_9 +$$
$$6\omega_6^2\omega_{13}\omega_{11}\omega_{18}^2 + 36\omega_6c_s^2\omega_{11}\omega_{18}^2\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_9 + 12\omega_6^2\omega_{11}\omega_{18}^2\omega_9 + 3\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 - 36\omega_6\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 +$$
$$12\omega_6^2\omega_{22}v_3^2\omega_{18}^2\omega_9 - 9\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 - 12\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 - 12\omega_6\omega_{13}\omega_{11}\omega_{18}\omega_9 - 36\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_9 - 18\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_{18}^2 +$$
$$12\omega_6^2\omega_{11}v_3^2\omega_{18}^2 - 18\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2\omega_{11}v_3^2\omega_{18}^2\omega_9 - 12\omega_6\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_9 + 18\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 + 12\omega_6\omega_{11}v_3^2\omega_{18}^2\omega_9 +$$
$$12\omega_6^2\omega_{22}\omega_{18}^2 - 36\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 - 3\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 + 12\omega_{22}\omega_{13}\omega_{18}^2\omega_9 - 12\omega_6\omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_9 + 6\omega_6^2\omega_{13}\omega_{11}\omega_{18}\omega_9 -$$
$$12\omega_6^2\omega_{22}v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{11}\omega_{18}^2 + 54\omega_6\omega_{22}\omega_{13}c_s^2\omega_{18}^2\omega_9 + 6\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_9 + 12\omega_6\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 - 6\omega_6^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 6\omega_6^2\omega_{22}\omega_{13}\omega_{18}^2 +$$
$$36\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 + \omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_9 + 6\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18}^2 + 18\omega_6\omega_{22}\omega_{13}v_3^2\omega_{18}^2\omega_9 + 12\omega_6\omega_{22}\omega_{18}^2\omega_9 + 12\omega_6\omega_{13}\omega_{11}\omega_{18}^2\omega_9 -$$
$$12\omega_6\omega_{11}\omega_{18}^2\omega_9 + 12\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 18\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 + 18\omega_6\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 - 36\omega_{22}\omega_{13}c_s^2\omega_{18}^2\omega_9 - \omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9 -$$
$$18\omega_6\omega_{22}\omega_{13}\omega_{18}^2\omega_9 + 3\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 - 12\omega_{22}\omega_{13}v_3^2\omega_{18}^2\omega_9 + 12\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_9 + 36\omega_6\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 - 15\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}^2\omega_9 +$$
$$5\omega_6^2\omega_{22}\omega_{13}\omega_{18}^2\omega_9 + 36\omega_6^2c_s^2\omega_{11}\omega_{18}^2 - 6\omega_6^2\omega_{13}\omega_{11}v_3^2\omega_{18}^2 - 12\omega_6\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_9 - 12\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 54\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 -$$
$$6\omega_6^2\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 - 36\omega_6^2\omega_{22}c_s^2\omega_{18}^2 - 5\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18}^2\omega_9)\frac{c_s^2v_3}{12\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (-6\omega_8\omega_2^2v_3^2 - 12\omega_8\omega_2 - 36\omega_6c_s^2\omega_8^2\omega_2 + 6\omega_6\omega_2^2v_3^2 - 36\omega_6c_s^2\omega_8 + 6\omega_8^2\omega_2v_3^2 + 12\omega_8^2 - 12\omega_6\omega_8^2 + 3c_s^2\omega_8^2\omega_2^2 - 18\omega_6\omega_8\omega_2 +$$
$$12\omega_6\omega_8 - 12\omega_6\omega_8v_3^2 + 18c_s^2\omega_8^2\omega_2 + 3\omega_6\omega_8\omega_2^2 + 36\omega_6c_s^2\omega_8^2 - 3\omega_6\omega_8\omega_2^2v_3^2 + 6\omega_8\omega_2^2 + 3\omega_6c_s^2\omega_8^2\omega_2^2 - 12\omega_6\omega_8^2\omega_2v_3^2 - 36c_s^2\omega_8^2 - \omega_8^2\omega_2^2 - 12\omega_8^2v_3^2 -$$
$$9\omega_6c_s^2\omega_8\omega_2^2 + 18\omega_6c_s^2\omega_2^2 + \omega_6\omega_8^2\omega_2^2v_3^2 + 12\omega_6\omega_2 + 12\omega_6\omega_8^2v_3^2 - \omega_6\omega_8^2\omega_2^2 + 36c_s^2\omega_8\omega_2 + 18\omega_6\omega_8\omega_2v_3^2 + \omega_8^2\omega_2^2v_3^2 + 12\omega_6\omega_8^2\omega_2 - 18c_s^2\omega_8\omega_2^2 +$$
$$12\omega_8\omega_2v_3^2 - 6\omega_6\omega_2^2 - 6\omega_8^2\omega_2 - 12\omega_6\omega_2v_3^2 + 54\omega_6c_s^2\omega_8\omega_2 - 36\omega_6c_s^2\omega_2)\frac{c_s^2v_3}{12\omega_6\omega_8^2\omega_2^2}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (-108\omega_4^2c_s^4\omega_1^2\omega_2^3 - 56\omega_3^2\omega_4^2\omega_1^3v_3^2 - 6\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 + 448\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2v_3^2 + 78\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^4 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 -$$
$$16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 - 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 144\omega_3^2\omega_4^2\omega_2^3v_3^4 + 52\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 -$$
$$108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 18\omega_4^2c_s^2\omega_1^3\omega_2^3 + 208\omega_3^2\omega_4^2c_s^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 + 228\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^4 - 18\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 +$$
$$72\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 - 56\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 + 152\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 - 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 208\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 92\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^2 + 184\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 -$$
$$6\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 108\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 - 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3v_3^2 - 104\omega_3^2\omega_4^2c_s^2\omega_1^3 + 320\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 36\omega_4^2c_s^2\omega_1^2\omega_2^3 - 36\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 118\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 +$$
$$216\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 48\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 394\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 +$$
$$120\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^4 + 54\omega_4^2c_s^4\omega_1^3\omega_2^3 + 104\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 - 88\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 - 36\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 120\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3 - 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 +$$
$$1232\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 + 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 - 342\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 276\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 - 24\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^4 - 16\omega_3^2\omega_4^2\omega_2^3 -$$
$$784\omega_3^2\omega_4^2c_s^2\omega_2^3v_3^2 - 288\omega_3^2\omega_4^2c_s^4\omega_2^3 + 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 - 136\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2v_3^2 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 + 588\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 -$$
$$36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 32\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 - 168\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 712\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 96\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^4 - 144\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 -$$
$$8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 460\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 18\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 + 160\omega_3^2\omega_4^2\omega_2^3v_3^2 + 18\omega_3^2c_s^2\omega_1^3\omega_2^3v_3^2 + 48\omega_3^2\omega_4^2\omega_1^3v_3^4 + 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 -$$
$$92\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^2 - 368\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 412\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 + 108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 132\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^4 +$$
$$144\omega_3^2\omega_4^2c_s^4\omega_1^3 + 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 78\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^4 - 256\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 + 56\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 + 18\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2)\frac{v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^2}$$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1 \partial x_3^3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (2 + 3c_s^2\omega + \omega v_3^2 - \omega - 6c_s^2 - 2v_3^2)\frac{\rho v_1 v_3}{12\omega}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (36\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}^2\omega_9^2 + 60\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 - 66\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_3^2\omega_{18}^2\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{18}^2\omega_9^2 + 48\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 96\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$$
$$12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_9^2 + 12\omega_{6}\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9^2 - 48\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_9^2 + 24\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 +$$
$$84\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^2\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9^2 +$$
$$24\omega_6^2\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2 + 18\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 3\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 + 24\omega_6^3\omega_{13}\omega_{11}^2v_3^2\omega_{18}^2\omega_9 -$$
$$\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^3\omega_{13}\omega_{11}^2v_3^2\omega_{18}^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2 -$$
$$24\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 66\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}^2\omega_9^2 + 24\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 -$$
$$12\omega_{6}\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_3^2\omega_{18}\omega_9 - 36\omega_{6}\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}\omega_9^2 +$$
$$12\omega_6^3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 132\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_9^2 -$$
$$24\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2 + 36\omega_{6}\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 36\omega_{6}\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2 - 84\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9^2 -$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_3^2\omega_{18}^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}^2\omega_{18}^2\omega_9^2 + 12\omega_{6}\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9^2 -$$
$$12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - 24\omega_6^3\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 12\omega_{6}\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_9^2 -$$
$$42\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}\omega_9^2 + 156\omega_{6}\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18}^2\omega_9^2 + 18\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 66\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_9^2 + 72\omega_{6}\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_9^2 +$$
$$12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9 + 90\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}\omega_9 + 24\omega_6^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}^2\omega_9^2 -$$
$$18\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 -$$
$$18\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 24\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 24\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2 +$$
$$12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 72\omega_{6}\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$$
$$24\omega_6^3\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{13}\omega_{11}^2v_3^2\omega_{18}^2\omega_9^2)\frac{\rho v_1 v_3}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (3c_s^2\omega_{11}\omega_{18} - 9c_s^2\omega_{11} + v_3^2\omega_{18} + 3\omega_{11} - 3\omega_{11}v_3^2 - \omega_{18} - \omega_{11}\omega_{18} + 3c_s^2\omega_{18} + \omega_{11}v_3^2\omega_{18})\frac{\rho v_1 v_3}{12\omega_{11}\omega_{18}}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (3\omega_6 + 3c_s^2\omega_8 + 3\omega_6c_s^2\omega_8 - \omega_6\omega_8 + \omega_6\omega_8v_3^2 + \omega_8v_3^2 - 9\omega_6c_s^2 - \omega_8 - 3\omega_6v_3^2)\frac{\rho v_1 v_3}{12\omega_6\omega_8}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (18\omega_3\omega_4\omega_1v_1^2 + 4\omega_3\omega_4\omega_2v_3^2 + 6\omega_3\omega_4c_s^2\omega_2 + 18\omega_3\omega_4c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4c_s^2\omega_1 - 18\omega_3\omega_4v_1^2\omega_2 - 27\omega_4c_s^2\omega_1\omega_2 -$$
$$27\omega_3c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_4\omega_1\omega_2v_3^2 - 9\omega_3\omega_1\omega_2v_3^2 + 9\omega_3\omega_1\omega_2 + 6\omega_3\omega_4\omega_1\omega_2v_3^2 + 2\omega_3\omega_4\omega_1v_3^2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_1 v_3}{72\omega_3\omega_4\omega_1\omega_2}$$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1 \partial x_3^3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = (-12 - 6\omega^2 - c_s^2\omega^3 - 54\omega v_3^2 + 2c_s^2\omega^2 + 18\omega + 18\omega^2v_3^2 + 36v_3^2)\frac{c_s^2\rho}{12\omega^3}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = (12\omega_6^3\omega_{22}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_9 + 144\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}^2\omega_9 + 12\omega_6^3c_s^2\omega_{11}^2\omega_{18}^2\omega_9 +$$
$$6\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2 + 36\omega_6^2\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}\omega_9 + 27\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2\omega_9 - 48\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}\omega_9 + 72\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2 +$$
$$12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2 - 36\omega_6^2\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}\omega_9 + 12\omega_{6}\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 +$$
$$\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 36\omega_{6}\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9 - 15\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9 -$$
$$12\omega_6^2\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 + 48\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}\omega_9 - 9\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{11}^2v_1^2\omega_{18}^2 - 36\omega_6^3c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_9 +$$
$$30\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}\omega_9 + 12\omega_6^3c_s^4\omega_{11}^2\omega_{18}^2 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2 -$$
$$6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2 - 12\omega_{6}\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 - 36\omega_6^3\omega_{22}\omega_{11}v_1^2v_3^2\omega_{18}^2 - 5\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18}\omega_9 +$$
$$72\omega_{6}\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}\omega_{11}v_1^2\omega_{18}^2\omega_9 + 12\omega_6^3\omega_{22}\omega_{11}v_1^2\omega_{18}^2 - 6\omega_6^3\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_9 +$$
$$18\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18} + 18\omega_{6}\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2 + 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2 +$$
$$12\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2\omega_9 - 18\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2 - 15\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 +$$
$$6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 12\omega_6^3c_s^2\omega_{11}^2\omega_{18}^2 + 15\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}\omega_9 -$$
$$36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 - 18\omega_6^3\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}c_s^2\omega_{11}v_1^2\omega_{18}^2 + 60\omega_{6}\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{11}^2v_1^2v_3^2\omega_{18}^2\omega_9 -$$
$$18\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{22}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 + 12\omega_6^2c_s^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9 +$$
$$36\omega_6^3c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 18\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}\omega_9 + 18\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 -$$
$$6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 54\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2\omega_9 + 18\omega_6^3\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9 - 12\omega_6^3c_s^4\omega_{11}^2\omega_{18}^2\omega_9 -$$
$$48\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18} + 12\omega_6^3c_s^2\omega_{11}^2v_1^2\omega_{18}^2 - 12\omega_6^2\omega_{13}\omega_{11}^2v_1^2\omega_{18}\omega_9 + 36\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18} + 36\omega_6^3\omega_{11}^2v_1^2v_3^2\omega_{18}^2 -$$
$$36\omega_6^2\omega_{22}c_s^2\omega_{11}v_3^2\omega_{18}^2\omega_9 - 24\omega_{6}\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}\omega_9 + 60\omega_{6}\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 72\omega_{6}\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}\omega_9 +$$
$$12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 + 36\omega_6^2c_s^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 - 36\omega_6^3\omega_{22}c_s^2\omega_{11}v_3^2\omega_{18}^2 - 12\omega_{6}\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 18\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}\omega_9 +$$
$$6\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 - 5\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 - 18\omega_6^3\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 + 6\omega_6^3\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 +$$
$$6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9 + 12\omega_{6}\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9 + 36\omega_6^3\omega_{22}\omega_{11}v_1^2v_3^2\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_9 +$$

$5\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 - 24\omega_6\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9 + 9\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_9 +$
$6\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^3c_s^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 24\omega_6\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}\omega_9 - 15\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2 +$
$6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_9 - 12\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 108\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2\omega_9 -$
$18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}\omega_{11}v_1^2v_3^2\omega_{18}^2\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_9 - 36\omega_6^3\omega_{11}^2v_1^2v_3^2\omega_{18}^2\omega_9 -$
$45\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18} - 72\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18} + 36\omega_6^3\omega_{22}c_s^2\omega_{11}v_3^2\omega_{18}^2\omega_9 - 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18} -$
$12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2 - 36\omega_6^2\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - \omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2\omega_9 +$
$24\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{11}v_1^2\omega_{18}^2\omega_9 + 36\omega_6^2\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}\omega_9 +$
$12\omega_6^3\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}c_s^4\omega_{11}^2\omega_{18}\omega_9 - 102\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}\omega_9)\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = (36\omega_6^3\omega_{22}v_3^2\omega_{18}\omega_9 - 18\omega_6^2\omega_{22}\omega_{13}\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{13}\omega_{11}\omega_9 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 - 18\omega_6^3\omega_{13}\omega_{11}v_3^2\omega_9 +$
$54\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9 - 12\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_9 + 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9 - 12\omega_6^3c_s^2\omega_{11}\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_9 - 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_9 +$
$18\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18} + 12\omega_6\omega_{22}\omega_{13}\omega_{18}\omega_9 + 6\omega_6^3\omega_{13}\omega_{11}\omega_{18} + \omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_9 - 5\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 +$
$18\omega_6^3\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{13}\omega_{11}v_3^2\omega_{18} + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_9 - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^3\omega_{11}v_3^2\omega_{18} - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9 +$
$6\omega_6^3\omega_{13}\omega_{11}\omega_9 - 36\omega_6^3\omega_{22}v_3^2\omega_{18} - 36\omega_6^3\omega_{11}v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_9 - 12\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 - 3\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 +$
$12\omega_6^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 36\omega_6\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{18} - 54\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_9 - 12\omega_6^3\omega_{22}\omega_{18}\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_9 + 12\omega_6^3\omega_{22}\omega_{18} -$
$6\omega_6^3\omega_{13}\omega_{11}\omega_{18}\omega_9 - 15\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9 - 5\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}\omega_9 + 36\omega_6^2\omega_{11}v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{11}\omega_{18} -$
$12\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3\omega_{11}\omega_{18}\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18} - 12\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{13}\omega_{11}v_3^2\omega_9 - 12\omega_6^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2\omega_{22}v_3^2\omega_{18}\omega_9 +$
$5\omega_6^3\omega_{22}\omega_{13}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{18}\omega_9 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}\omega_{18} - 12\omega_6^3\omega_{22}c_s^2\omega_{18} + 36\omega_6\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_9 + 12\omega_6^3c_s^2\omega_{11}\omega_{18} +$
$18\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 + 12\omega_6^2c_s^2\omega_{11}\omega_{18}\omega_9)\frac{c_s^2\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = (18\omega_8\omega_2^2v_3^2 + 12\omega_8\omega_2 - 54\omega_6\omega_2^2v_3^2 - 12\omega_6c_s^2\omega_8 + 36\omega_2^2v_3^2 + 18\omega_6\omega_2^3v_3^2 - \omega_8\omega_2^3 + \omega_6\omega_8\omega_2^2 + 3\omega_8\omega_2^3v_3^2 - 3\omega_6\omega_8\omega_2^2v_3^2 - 6\omega_8\omega_2^2 -$
$18\omega_2^3v_3^2 - 6c_s^2\omega_2^3 - 5\omega_6c_s^2\omega_8\omega_2^2 - 18\omega_6c_s^2\omega_2^2 - 12\omega_6\omega_2 - \omega_6c_s^2\omega_8\omega_2^3 + 6\omega_6c_s^2\omega_2^3 + 12c_s^2\omega_2^2 - 12c_s^2\omega_8\omega_2 - 6\omega_6\omega_2^3 + 6c_s^2\omega_8\omega_2^2 + 6\omega_2^3 - 36\omega_8\omega_2v_3^2 +$
$18\omega_6\omega_2^2 + c_s^2\omega_8\omega_2^3 - 12\omega_2^2 + 36\omega_6\omega_2v_3^2 + 18\omega_6c_s^2\omega_8\omega_2 + 12\omega_6c_s^2\omega_2)\frac{c_s^2\rho}{12\omega_6\omega_8\omega_2^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = (153\omega_3\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 - 4\omega_3\omega_4\omega_1^2\omega_2^2 + 12\omega_3\omega_4\omega_1\omega_2^2v_3^2 + \omega_3\omega_4\omega_1^2v_1^2\omega_2^3 - 20\omega_3\omega_4c_s^2\omega_1^3 - 28\omega_3\omega_4c_s^4\omega_1\omega_2^2 - 168\omega_3\omega_4\omega_1^2\omega_2^2v_3^4 +$
$432\omega_3\omega_4c_s^2\omega_1\omega_2^3v_3^2 + 60\omega_4c_s^2\omega_1^2\omega_2^2v_3^2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 - 312\omega_3\omega_4c_s^2\omega_2^3v_3^2 - 10\omega_3\omega_4\omega_1^3\omega_2 - 36\omega_3c_s^2\omega_1\omega_2^3 - 96\omega_3\omega_4\omega_1^2\omega_2v_3^2 + 94\omega_3\omega_4c_s^4\omega_1\omega_2^3 +$
$\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 - 8\omega_4c_s^2\omega_1\omega_2^3 - 138\omega_3\omega_4\omega_1^2\omega_2^3v_3^4 - 264\omega_3\omega_4\omega_2^3v_3^4 - 240\omega_3\omega_4\omega_1^3\omega_2v_3^4 + 120\omega_3\omega_4c_s^2\omega_1^2\omega_2v_3^2 - 108\omega_3c_s^2\omega_1^2\omega_2^3v_3^2 - 60\omega_3\omega_4\omega_1^3v_3^2 -$
$222\omega_3\omega_4\omega_1\omega_2^3v_3^2 + 32\omega_3\omega_4c_s^2\omega_1\omega_2^2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 36\omega_3c_s^4\omega_1\omega_2^3 + 24\omega_4c_s^2\omega_1^3\omega_2v_3^2 - 3\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 54\omega_3\omega_4c_s^2\omega_1\omega_2^3 + 40\omega_3\omega_4c_s^2\omega_2^3 +$
$8\omega_3\omega_4\omega_1^2\omega_2 - 54\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 60\omega_3\omega_4c_s^2\omega_1\omega_2^2v_3^2 - 81\omega_3\omega_4\omega_1^3\omega_2^2v_3^2 + 8\omega_4c_s^4\omega_1\omega_2^3 + 96\omega_3\omega_4\omega_1^3v_3^4 - 9\omega_4c_s^2\omega_1^3\omega_2^3 - 3\omega_3\omega_4c_s^4\omega_1^3\omega_2^3 +$
$8\omega_3\omega_4c_s^4\omega_1^2\omega_2 + 408\omega_3\omega_4\omega_1\omega_2^3v_3^4 - 36\omega_3c_s^4\omega_1^2\omega_2^3 + 81\omega_3\omega_4\omega_1^2\omega_2^3v_3^2 - 9\omega_3c_s^2\omega_1^3\omega_2^3 + 42\omega_3\omega_4c_s^2\omega_1^3\omega_2 + 144\omega_3\omega_4\omega_2^3v_3^2 - 54\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 +$
$24\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - \omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 18\omega_4c_s^4\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_1\omega_2^3v_3^2 + 138\omega_3\omega_4\omega_1^3\omega_2v_3^2 + 8\omega_4c_s^4\omega_1^3\omega_2 + 17\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 8\omega_3\omega_4\omega_2^3 +$
$138\omega_3\omega_4\omega_1^3\omega_2^2v_3^4 - \omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 20\omega_4c_s^4\omega_1^2\omega_2^2 - 90\omega_3\omega_4c_s^2\omega_1^2\omega_2^2v_3^2 + 24\omega_4c_s^2\omega_1\omega_2^3v_3^2 + 16\omega_3\omega_4c_s^4\omega_1^3 - 6\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 + 9\omega_4c_s^4\omega_1^3\omega_2^2 -$
$16\omega_3\omega_4c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1^3 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 84\omega_3\omega_4\omega_1^2\omega_2^2v_3^2 + 27\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 + 14\omega_3\omega_4\omega_1\omega_2^3 - 29\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 - 24\omega_3\omega_4\omega_1\omega_2^2v_3^4 -$
$68\omega_3\omega_4c_s^4\omega_2^3 - 32\omega_3\omega_4c_s^4\omega_1^3\omega_2 - 8\omega_4c_s^2\omega_1^3\omega_2 + 18\omega_4c_s^2\omega_1^2\omega_2^3 + 27\omega_3c_s^2\omega_1^3\omega_2^3v_3^2 - 24\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2^2 - 288\omega_3\omega_4c_s^2\omega_1^3\omega_2v_3^2 +$
$144\omega_3\omega_4c_s^2\omega_1^3v_3^2 + 3\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 - 153\omega_3\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 18\omega_4c_s^4\omega_1^3\omega_2^2 - 20\omega_4c_s^2\omega_1^2\omega_2^2 + 192\omega_3\omega_4\omega_1^2\omega_2v_3^4 + 10\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2\partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2 - 6\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}^2 - 4\omega_6\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 9\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_{18}^2 + 12\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2 + 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8v_3^2\omega_{18}^2 - 4\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18}^2 -$
$12\omega_6\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 4\omega_6\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}^2 -$
$24\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 12\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 9\omega_6^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5v_3^2\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}v_3^2\omega_{18}^2 - 12\omega_6c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 3\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}^2 -$
$2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_5v_3^2\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2v_3^2\omega_{18}^2 + 4\omega_6\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 -$
$12\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2 - 12\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 +$
$4\omega_6\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 12\omega_6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}^2 -$
$6\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2 - 4\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} - 3\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_5v_3^2\omega_{18}^2 -$

$4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5 v_3^2\omega_{18}^2 + 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 4\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 12\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8 v_3^2\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_8\omega_5 v_3^2\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8 v_3^2\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{18}^2 + 3\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{19} c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 24\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 v_3^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8 v_3^2\omega_{18}^2 + 3\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 v_3^2\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{18}^2 + 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18}^2 - 4\omega_6\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 v_3^2\omega_{18}^2)\frac{v_1 v_2 v_3}{4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{v_1 v_2 v_3}{12\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_2 \partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = (-\omega_8^3\omega_5^2 v_3^2\omega_{18}^2 - 6\omega_6 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{20}\omega_8^2\omega_5^2 v_3^2\omega_{18} + 2\omega_6^3 c_s^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_8^2\omega_5^2 v_3^2\omega_{18}^2 - 7\omega_6^3 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2 + \omega_6^3\omega_{20}\omega_8^2\omega_5 v_3^2\omega_{18} + \omega_6^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - 2\omega_6^2\omega_8\omega_5^2\omega_{18}^2 + 2\omega_6^2\omega_{20}\omega_8^2\omega_5^2 - \omega_6^2\omega_{20}\omega_8^2\omega_5^2 v_3^2\omega_{18}^2 - 2\omega_6^2 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 6\omega_6 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + \omega_6^3\omega_{20}\omega_8^2\omega_5^2 v_3^2 + \omega_6^3\omega_{20}\omega_8\omega_5\omega_{18}^2 + \omega_6^3 c_s^2\omega_8^2\omega_5^2\omega_{18}^2 + \omega_6^3\omega_{20}\omega_8\omega_5^2 v_3^2\omega_{18}^2 - 2\omega_6^2 c_s^2\omega_{20}\omega_8^2\omega_5^2 - \omega_6^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2 c_s^2\omega_8\omega_5^2\omega_{18}^2 + 2\omega_6^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 11\omega_6^2 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - \omega_6^3 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_6^3 c_s^2\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^3\omega_8\omega_5^2 v_3^2\omega_{18}^2 + \omega_6^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_8^2\omega_5^2 v_3^2\omega_{18} + 4\omega_6^2\omega_{20}\omega_8^2\omega_5^2 v_3^2\omega_{18} + 7\omega_6^2 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - \omega_6^3\omega_{20}\omega_8^2\omega_5^2 + 2\omega_6^3\omega_8\omega_5^2\omega_{18}^2 - 2\omega_6^3 c_s^2\omega_{20}\omega_5^2\omega_{18}^2 + \omega_6\omega_{20}\omega_8^2\omega_5^2 v_3^2\omega_{18}^2 + \omega_6^3\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_6^2\omega_{20}\omega_8\omega_5^2 v_3^2\omega_{18}^2 - 5\omega_6^2 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_6^2\omega_8\omega_5^2 v_3^2\omega_{18}^2 + 2\omega_6^2 c_s^2\omega_8^2\omega_5^2\omega_{18} + 2\omega_6\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^3\omega_8\omega_5\omega_{18}^2 - \omega_6^3\omega_{20}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_8\omega_5 v_3^2\omega_{18}^2 - 2\omega_6 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^3 c_s^2\omega_{20}\omega_5\omega_{18}^2 + 4\omega_6^2 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{20}\omega_8^2\omega_5 v_3^2\omega_{18} - 2\omega_6^2\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2 c_s^2\omega_{20}\omega_5^2\omega_{18}^2 - 4\omega_6^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_6^3 c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 8c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6^3\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6^3\omega_8^2\omega_5^2 v_3^2\omega_{18} - \omega_6^3\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - \omega_6^3 c_s^2\omega_8^2\omega_5\omega_{18}^2 + \omega_6^3\omega_8^2\omega_5^2 v_3^2\omega_{18}^2 + \omega_6^3\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^3 c_s^2\omega_{20}\omega_8\omega_{18}^2 + 2\omega_6^2\omega_8^2\omega_5^2\omega_{18}^2 + \omega_6^2\omega_{20}\omega_8^2\omega_5 v_3^2\omega_{18}^2 + \omega_6^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6^3\omega_{20}\omega_8^2\omega_5^2 v_3^2\omega_{18} - \omega_6\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_6^3 c_s^2\omega_8\omega_5^2\omega_{18}^2 + \omega_6^3 c_s^2\omega_{20}\omega_8^2\omega_5^2 - 2\omega_6^2 c_s^2\omega_{20}\omega_8^2\omega_{18}^2 + 13\omega_6 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 5\omega_6^3 c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + 4\omega_6^2 c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^2\omega_{20}\omega_8^2\omega_5^2 v_3^2 - \omega_6^3\omega_{20}\omega_8\omega_5 v_3^2\omega_{18}^2 - 2\omega_6^2 c_s^2\omega_8^2\omega_5^2\omega_{18}^2)\frac{\rho v_2 v_3}{2\omega_6^3\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = (-18\omega_3^2\omega_4 c_s^2 + 3\omega_3^2\omega_1 v_3^2 - 3\omega_3^2\omega_1 v_2^2 + 18\omega_4^2 c_s^2\omega_1 + 18\omega_3\omega_4^2 c_s^2 - 2\omega_3\omega_4^2\omega_1 v_2^2 + 6\omega_3^2\omega_4 - 18\omega_3\omega_4 c_s^2\omega_1 - 2\omega_3^2\omega_4\omega_1 - 6\omega_3^2\omega_4 v_2^2 + 6\omega_3^2 v_2^2 + 2\omega_3^2\omega_4\omega_1 v_2^2 + 2\omega_3\omega_4^2\omega_1 + 6\omega_3\omega_4^2 v_2^2 - 6\omega_3^2 v_3^2 + 3\omega_4^2\omega_1 v_3^2 - 6\omega_3\omega_4^2 c_s^2\omega_1 + 12\omega_3\omega_4 v_3^2 + 6\omega_3\omega_4\omega_1 + 3\omega_4^2\omega_1 v_2^2 - 6\omega_4^2\omega_1 - 6\omega_4^2 v_2^2 - 12\omega_3\omega_4 + 12\omega_4^2 - 6\omega_4^2 v_3^2 + 36\omega_3\omega_4 c_s^2 + 6\omega_3^2\omega_4 c_s^2\omega_1 - 6\omega_3\omega_4^2 - 6\omega_3\omega_4\omega_1 v_3^2 - 36\omega_4^2 c_s^2)\frac{\rho v_2 v_3}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2 \partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (2 + 3c_s^2\omega + \omega v_3^2 - \omega - 6c_s^2 - 2v_3^2)\frac{\rho v_1 v_3}{12\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 v_3^2\omega_{18} + 6\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 v_3^2\omega_{18}^2 + 12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 v_3^2\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 9\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5 v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 24\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 18\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 v_3^2\omega_{18} - 36\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 v_3^2\omega_{18} + 12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2 v_3^2\omega_{18} + 6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 54\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2 v_3^2\omega_{18}^2 + 6\omega_6^2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 v_3^2\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 v_3^2 - 42\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 42\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$

$6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-12\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2v_3^2\omega_{18}^2-36\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2+12\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18}^2-12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2-$
$6\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2-12\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2-12\omega_6\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18}^2+3\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-12\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2-$
$18\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18}^2-\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-12\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2+12\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+$
$12\omega_6\omega_{19}\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2+18\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2+24\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+12\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18}^2-$
$12\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+36\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2-6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}^2+\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18}^2-12\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_{18}^2+$
$6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2+12\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-54\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2+12\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}^2-$
$18\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}-12\omega_6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+54\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-24\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2-$
$12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}+12\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}-24\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-6\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+24\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2-$
$12\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18}^2+6\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18}^2-12\omega_6\omega_{19}\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18}-$
$6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2-36\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+30\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2+12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5\omega_{18}^2-$
$6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18}^2+9\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+12\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2+36\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2-12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2-$
$6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2-9\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18}^2+18\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2-6\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2v_3^2\omega_{18}^2-12\omega_6\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2-$
$54\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2-6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2+12\omega_6\omega_{19}\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}-$
$12\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}+12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2v_3^2\omega_{18}^2-12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2-$
$9\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2+12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2v_3^2\omega_{18}^2-18\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2-$
$6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2+12\omega_6\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2-12\omega_6^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2+24\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}+$
$6\omega_6^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18}^2-24\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2+12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+$
$12\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2-12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2+12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2)\frac{\rho v_1v_3}{12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}=C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}=(-\omega_{19}+3\omega_{19}c_s^2+3\omega_{19}c_s^2\omega_{11}+\omega_{19}v_3^2-9c_s^2\omega_{11}+3\omega_{11}+\omega_{19}\omega_{11}v_3^2-\omega_{19}\omega_{11}-3\omega_{11}v_3^2)\frac{\rho v_1v_3}{12\omega_{19}\omega_{11}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}=C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}=(3\omega_6-\omega_{10}-\omega_6\omega_{10}+3\omega_6\omega_{10}c_s^2-9\omega_6c_s^2+3\omega_{10}c_s^2+\omega_6\omega_{10}v_3^2-3\omega_6v_3^2+\omega_{10}v_3^2)\frac{\rho v_1v_3}{12\omega_6\omega_{10}}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}=(4\omega_3\omega_4\omega_2v_3^2+6\omega_3\omega_4c_s^2\omega_2+18\omega_3\omega_4c_s^2\omega_1\omega_2+9\omega_4\omega_1\omega_2+12\omega_3\omega_4c_s^2\omega_1-27\omega_4c_s^2\omega_1\omega_2-27\omega_3c_s^2\omega_1\omega_2-6\omega_3\omega_4\omega_1\omega_2-$
$8\omega_3\omega_4\omega_1-18\omega_3\omega_4v_2^2\omega_2-9\omega_4\omega_1\omega_2v_3^2-9\omega_3\omega_1\omega_2v_3^2+9\omega_3\omega_1\omega_2+6\omega_3\omega_4\omega_1\omega_2v_3^2+2\omega_3\omega_4\omega_1v_3^2+2\omega_3\omega_4\omega_2+18\omega_3\omega_4\omega_1v_2^2)\frac{\rho v_1v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$ **at** $\frac{\partial^4v_3}{\partial x_2\partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=(12\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}+2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2-2\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}+$
$4\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_{18}^2-12\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}^2-4\omega_6\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+4\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2+3\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-$
$4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_{18}^2+4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2+8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-$
$12\omega_6^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2-2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2-6\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8v_3^2\omega_{18}^2-4\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+12\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18}^2-$
$4\omega_6\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-4\omega_6\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2-4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_{18}^2+4\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2-12\omega_6\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}^2-$
$8\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+2\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5+4\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2-4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-3\omega_6^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+$
$4\omega_6\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+2\omega_6^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5v_3^2\omega_{18}^2+4\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2-$
$12\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}v_3^2\omega_{18}^2-4\omega_6c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-2\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}+2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+$
$2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}-9\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}^2+4\omega_6\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}^2-2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5+6\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}^2-$
$2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-12\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}^2+4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}+2\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2-4\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}+$
$12\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_5v_3^2\omega_{18}^2+4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2+12\omega_6^2\omega_{19}\omega_7\omega_{11}^2v_3^2\omega_{18}^2+12\omega_6\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}^2+4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2-$
$4\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2-4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}-12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2-4\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-6\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}-$
$6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}+4\omega_6\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}+4\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-2\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-4\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5+$
$4\omega_6\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+2\omega_6^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5+4\omega_6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-4\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18}^2-$
$2\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2-12\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}-3\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2-12\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_5v_3^2\omega_{18}^2-$
$12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18}^2+24\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}-2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}+4\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2+4\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+$
$4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2-4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}-8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+12\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}^2+$
$2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_{18}^2-12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}+12\omega_6\omega_{19}\omega_7\omega_{20}\omega_8\omega_5v_3^2\omega_{18}^2+12\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2+4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-$
$4\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{18}^2+9\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}^2-4\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+8\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2-$
$2\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}^2-4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2+2\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}-4\omega_6\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2+$
$12\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}^2-2\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+6\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2+3\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2-$
$24\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}^2+4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{18}^2+12\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18}^2-12\omega_6\omega_7\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}^2)\frac{\rho v_1v_2}{4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{\rho v_1 v_2}{36\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_z^4\rho}$ **at** $\frac{\partial^4\rho}{\partial x_3^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^4\rho} = (c_s^2\omega + 6v_3^4 + 3\omega v_3^2 + 2c_s^4 - 3\omega v_3^4 + 24c_s^2 v_3^2 - c_s^4\omega - 2c_s^2 - 12c_s^2\omega v_3^2 - 6v_3^2)\frac{v_1}{24\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho} = (-48\omega_6\omega_{11}v_3^4\omega_{18} + 24\omega_6 c_s^4\omega_{18}^2 + \omega_6^2 c_s^2\omega_{11}^2\omega_{18}^2 + 72\omega_6^2 c_s^2\omega_{11}v_3^2\omega_{18} + 72\omega_6^2 c_s^2\omega_{11}^2 v_3^2 - 3\omega_6^2\omega_{11}^2 v_3^4\omega_{18}^2 - 144\omega_6 c_s^2\omega_{11}v_3^2\omega_{18} - 24c_s^2\omega_{11}\omega_{18}^2 + 48\omega_{11}v_3^4\omega_{18}^2 - 72\omega_6 v_3^2\omega_{18}^2 - 48\omega_6 c_s^4\omega_{11}\omega_{18}^2 - 12\omega_6^2 c_s^4\omega_{11}^2\omega_{18} + 48\omega_{11}^2 v_3^2\omega_{18} + 24\omega_6 c_s^2\omega_{11}^2 - 24\omega_6^2\omega_{11}v_3^2\omega_{18} - \omega_6^2 c_s^4\omega_{11}^2\omega_{18}^2 - 36\omega_6^2 v_3^4\omega_{18}^2 - 36\omega_6^2\omega_{11}v_3^2\omega_{18}^2 - 216c_s^2\omega_{11}^2 v_3^2\omega_{18} - 30\omega_6^2\omega_{11}^2 v_3^4\omega_{18} - 432\omega_6 c_s^2\omega_{11}v_3^2\omega_{18}^2 + 12\omega_6^2 c_s^4\omega_{11}^2 + 150\omega_6^2 c_s^2\omega_{11}v_3^2\omega_{18}^2 + 12\omega_6^2 c_s^2\omega_{18}^2 + 12\omega_6^2\omega_{11}^2 v_3^4 + 24c_s^4\omega_{11}\omega_{18}^2 - 96\omega_6\omega_{11}^2 v_3^2\omega_{18} + 48\omega_6 c_s^2\omega_{11}\omega_{18}^2 - 96\omega_6\omega_{11}v_3^4\omega_{18}^2 + 24\omega_6\omega_{11}^2 v_3^2 - 144\omega_6^2 c_s^2 v_3^2\omega_{18}^2 + 12\omega_6^2 c_s^2\omega_{11}^2\omega_{18} + 3\omega_6^2\omega_{11}^2 v_3^2\omega_{18}^2 - 48\omega_{11}v_3^2\omega_{18}^2 + 72\omega_6 v_3^4\omega_{18}^2 - 48\omega_{11}^2 v_3^4\omega_{18} + 24\omega_6^2\omega_{11}v_3^4\omega_{18} - 24\omega_6 c_s^4\omega_{11}^2 + 48\omega_6 c_s^4\omega_{11}^2\omega_{18} + 48\omega_6\omega_{11}v_3^2\omega_{18} - 24\omega_6 c_s^2\omega_{18}^2 - 24\omega_6\omega_{11}^2 v_3^4 - 12\omega_6^2 c_s^2\omega_{11}^2 v_3^2\omega_{18}^2 + 14\omega_6^2 c_s^4\omega_{11}\omega_{18}^2 + 24c_s^2\omega_{11}^2\omega_{18} - 12\omega_6^2\omega_{11}^2 v_3^2 - 144\omega_6 c_s^2\omega_{11}^2 v_3^2 - 12\omega_6^2 c_s^4\omega_{18}^2 + 96\omega_6\omega_{11}^2 v_3^4\omega_{18} + 96\omega_6\omega_{11}v_3^2\omega_{18}^2 - 126\omega_6^2 c_s^2\omega_{11}^2 v_3^2\omega_{18} + 288\omega_6 c_s^2 v_3^2\omega_{18}^2 - 48\omega_6 c_s^2\omega_{11}^2\omega_{18} - 14\omega_6^2 c_s^2\omega_{11}\omega_{18}^2 + 36\omega_6^2 v_3^2\omega_{18}^2 + 36\omega_6^2\omega_{11}v_3^4\omega_{18}^2 + 432\omega_6 c_s^2\omega_{11}^2 v_3^2\omega_{18} + 216c_s^2\omega_{11}v_3^2\omega_{18}^2 - 12\omega_6^2 c_s^2\omega_{11}^2 + 30\omega_6^2\omega_{11}^2 v_3^2\omega_{18} - 24c_s^4\omega_{11}^2\omega_{18})\frac{v_1}{24\omega_6^2\omega_{11}^2\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z^4\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z^4\rho} = (-12c_s^2\omega_{11}v_3^2 + 6v_3^4 - 3\omega_{11}v_3^4 + c_s^2\omega_{11} + 2c_s^4 + 24c_s^2 v_3^2 + 3\omega_{11}v_3^2 - 2c_s^2 - c_s^4\omega_{11} - 6v_3^2)\frac{v_1}{24\omega_{11}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z^4\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z^4\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z^4\rho} = (6v_3^4 - 3\omega_6 v_3^4 + 2c_s^4 - \omega_6 c_s^4 - 12\omega_6 c_s^2 v_3^2 + \omega_6 c_s^2 + 24c_s^2 v_3^2 - 2c_s^2 + 3\omega_6 v_3^2 - 6v_3^2)\frac{v_1}{24\omega_6}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z^4\rho} = (12\omega_2 v_3^4 + 2c_s^4\omega_1 - 6\omega_1 v_3^2 + 9\omega_1\omega_2 v_3^2 - 36c_s^2\omega_1\omega_2 v_3^2 + 48c_s^2\omega_2 v_3^2 + 4c_s^4\omega_2 - 3c_s^4\omega_1\omega_2 + 24c_s^2\omega_1 v_3^2 - 2c_s^2\omega_1 + 6\omega_1 v_3^4 - 9\omega_1\omega_2 v_3^4 - 12\omega_2 v_3^2 - 4c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{v_1}{72\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_z^4 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_3^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^4 v_1} = (-84c_s^2\omega^2 v_3^2 + 36c_s^2\omega - 72v_3^4 + 3\omega^3 v_3^4 + c_s^2\omega^3 + 6c_s^2\omega^3 v_3^2 - 108\omega v_3^2 - 42\omega^2 v_3^4 - 14c_s^2\omega^2 + 48c_s^4 + 108\omega v_3^4 - 144c_s^2 v_3^2 + 42\omega^2 v_3^2 - 72c_s^4\omega - 24c_s^2 + 30c_s^4\omega^2 - 3\omega^3 v_3^2 - 3c_s^4\omega^3 + 216c_s^2\omega v_3^2 + 72v_3^2)\frac{\rho}{24\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_1} = (6\omega_6^3 c_s^4\omega_{18} + 24\omega_6^2 v_3^2 - 48\omega_6 c_s^4\omega_{18}^2 + 48\omega_6^2 c_s^2 v_3^2\omega_{18} + 6\omega_6^3 c_s^2 v_3^2\omega_{18}^2 + 24\omega_6^2 c_s^2\omega_{18} + 24c_s^4\omega_{18}^2 - 24\omega_6 v_3^2\omega_{18}^2 + 18\omega_6^3 v_3^2\omega_{18} + 72\omega_6^2 v_3^4\omega_{18} - 24\omega_6^2 c_s^2 v_3^2 - 24\omega_6^2 v_3^4\omega_{18}^2 + 48\omega_6 v_3^2\omega_{18} - 12\omega_6^3 v_3^2 - 3\omega_6^3 v_3^2\omega_{18}^2 - 12\omega_6^3 c_s^2 v_3^2\omega_{18} - 8\omega_6^2 c_s^2\omega_{18}^2 - 3\omega_6^3 c_s^4\omega_{18}^2 + 24\omega_6 c_s^4\omega_{18} - 72\omega_6^2 c_s^2 v_3^2\omega_{18}^2 + 24\omega_6 v_3^4\omega_{18}^2 + 12\omega_6^3 v_3^4 - 18\omega_6^3 v_3^4\omega_{18} - 24\omega_6 c_s^2 v_3^2\omega_{18} - 72\omega_6^2 v_3^2\omega_{18} - 6\omega_6^3 c_s^2\omega_{18} + 12\omega_6 c_s^2\omega_{18}^2 - 24\omega_6^2 c_s^4\omega_{18} - 96c_s^2 v_3^2\omega_{18}^2 + 24\omega_6^2 c_s^4\omega_{18}^2 - 24\omega_6^2 v_3^4 + \omega_6^3 c_s^2\omega_{18}^2 - 24\omega_6 c_s^2\omega_{18} + 156\omega_6 c_s^2 v_3^2\omega_{18}^2 + 24\omega_6^2 v_3^2\omega_{18}^2 - 48\omega_6 v_3^4\omega_{18} + 3\omega_6^3 v_3^4\omega_{18}^2 + 12\omega_6^3 c_s^2 v_3^2)\frac{\rho}{24\omega_6^3\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z^4 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z^4 v_1} =$
$(6\omega_6^3 c_s^4\omega_{18} + 72\omega_6^2 v_3^2 - 48\omega_6 c_s^4\omega_{18}^2 + 144\omega_6^2 c_s^2 v_3^2\omega_{18} + 6\omega_6^3 c_s^2 v_3^2\omega_{18}^2 + 24\omega_6^2 c_s^2\omega_{18} + 24c_s^4\omega_{18}^2 + 30\omega_6^3 v_3^2\omega_{18} + 72\omega_6^2 v_3^4\omega_{18} - 216\omega_6^2 c_s^2 v_3^2 - 12\omega_6^2 v_3^4\omega_{18}^2 - 36\omega_6^3 v_3^2 - 3\omega_6^3 v_3^2\omega_{18}^2 - 72\omega_6^3 c_s^2 v_3^2\omega_{18} - 8\omega_6^2 c_s^2\omega_{18}^2 - 3\omega_6^3 c_s^4\omega_{18}^2 + 24\omega_6 c_s^4\omega_{18} - 12\omega_6^2 c_s^2 v_3^2\omega_{18}^2 + 36\omega_6^3 v_3^4 - 30\omega_6^3 v_3^4\omega_{18} + 72\omega_6 c_s^2 v_3^2\omega_{18} - 72\omega_6^2 v_3^2\omega_{18} - 6\omega_6^3 c_s^2\omega_{18} + 12\omega_6 c_s^2\omega_{18}^2 - 24\omega_6^2 c_s^4\omega_{18} + 24\omega_6^2 c_s^4\omega_{18}^2 - 72\omega_6^2 v_3^4 + \omega_6^3 c_s^2\omega_{18}^2 - 24\omega_6 c_s^2\omega_{18} - 36\omega_6 c_s^2 v_3^2\omega_{18}^2 + 12\omega_6^2 v_3^2\omega_{18}^2 + 3\omega_6^3 v_3^4\omega_{18}^2 + 108\omega_6^3 c_s^2 v_3^2)\frac{\rho}{24\omega_6^3\omega_{18}^2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z^4 v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z^4 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z^4 v_1} =$
$(-48c_s^4\omega_8^2\omega_2 - 72\omega_8\omega_2^2 v_3^2 - 12\omega_8^2\omega_2^2 v_3^4 + c_s^2\omega_8^2\omega_2^3 - 72c_s^2\omega_8\omega_2^3 v_3^2 + 72\omega_2^2 v_3^2 - 8c_s^2\omega_8^2\omega_2^2 + 12c_s^2\omega_8^2\omega_2 + 3\omega_8^2\omega_2^3 v_3^4 - 36c_s^2\omega_8^2\omega_2 v_3^2 - 3c_s^4\omega_8^2\omega_2^3 + 30\omega_8\omega_2^3 v_3^2 - 36\omega_2^3 v_3^2 + 144c_s^2\omega_8\omega_2^2 v_3^2 + 24c_s^4\omega_8^2\omega_2^2 - 30\omega_8\omega_2^3 v_3^4 - 216c_s^2\omega_2^2 v_3^2 - 24c_s^4\omega_8\omega_2^2 - 3\omega_8^2\omega_2^3 v_3^2 + 72c_s^2\omega_8\omega_2 v_3^2 - 24c_s^2\omega_8\omega_2 - 12c_s^2\omega_8^2\omega_2^2 v_3^2 + 6c_s^4\omega_8\omega_2^3 + 36\omega_2^3 v_3^4 + 12\omega_8^2\omega_2^2 v_3^2 + 108c_s^2\omega_2^3 v_3^2 + 24c_s^4\omega_8^2 + 72\omega_8\omega_2^2 v_3^4 + 24c_s^2\omega_8\omega_2^2 - 72\omega_2^2 v_3^4 + 24c_s^4\omega_8\omega_2 + 6c_s^2\omega_8^2\omega_2^3 v_3^2 - 6c_s^2\omega_8\omega_2^3)\frac{\rho}{24\omega_8^2\omega_2^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z^4 v_1} = (-3\omega_3^2\omega_4^2\omega_1^3 v_3^2 - 12\omega_3^2\omega_4 c_s^4\omega_1^2 + 36\omega_3\omega_4\omega_1^2 v_3^2 + 36\omega_3\omega_4^2\omega_1^2 v_3^4 - 12\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_3^2 + 12\omega_3^2\omega_4^2 c_s^2\omega_1 - 15\omega_3^2\omega_4\omega_1^3 v_3^4 + 12\omega_3\omega_4^2 c_s^4\omega_1 + 72\omega_3\omega_4^2 c_s^2\omega_1^2 v_3^2 + 27\omega_3^2 c_s^2\omega_1^3 v_3^2 + 3\omega_3^2\omega_4 c_s^4\omega_1^3 + 24\omega_3^2\omega_4^2 c_s^4 + 27\omega_4^2 c_s^2\omega_1^3 v_3^2 - 9\omega_4^2\omega_1^3 v_3^2 - 18\omega_3^2\omega_1^2 v_3^4 + \omega_3^2\omega_4^2 c_s^2\omega_1^3 +$

$6\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 36\omega_3^2\omega_4\omega_1^2v_3^4 - 15\omega_3\omega_4^2\omega_1^3v_3^4 - 12\omega_3\omega_4^2c_s^4\omega_1^2 - 18\omega_3\omega_4\omega_1^3v_3^2 + 12\omega_3^2\omega_4^2\omega_1^2v_3^2 - 54\omega_4^2c_s^2\omega_1^2v_3^2 + 9\omega_3^2\omega_1^3v_3^4 + 18\omega_4^2\omega_1^2v_3^2 + 36\omega_3^2\omega_4c_s^2\omega_1v_3^2 - 8\omega_3^2\omega_4^2c_s^2\omega_1^2 + 12\omega_3^2\omega_4c_s^4\omega_1 - 36\omega_3\omega_4^2c_s^2\omega_1^3v_3^2 - 54\omega_3^2c_s^2\omega_1^2v_3^2 + 3\omega_3\omega_4^2c_s^4\omega_1^3 + 72\omega_3^2\omega_4c_s^2\omega_1^2v_3^2 + 18\omega_3\omega_4\omega_1^3v_3^4 - 12\omega_3\omega_4^2c_s^2\omega_1 - 12\omega_3^2\omega_4^2\omega_1^2v_3^4 - 3\omega_3^2\omega_4c_s^2\omega_1^3 - 36\omega_3^2\omega_4\omega_1^2v_3^2 + 15\omega_3\omega_4^2\omega_1^3v_3^2 + 12\omega_3^2\omega_4c_s^2\omega_1^2 - 108\omega_3\omega_4c_s^2\omega_1^2v_3^2 - 18\omega_4^2\omega_1^2v_3^4 - 9\omega_3^2\omega_1^3v_3^2 - 48\omega_3^2\omega_4^2c_s^4\omega_1 - 36\omega_3\omega_4^2\omega_1^2v_3^2 + 36\omega_3\omega_4^2c_s^2\omega_1v_3^2 + 15\omega_3^2\omega_4\omega_1^3v_3^2 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2 - 12\omega_3^2\omega_4c_s^2\omega_1 + 3\omega_3^2\omega_4^2\omega_1^3v_3^4 - 3\omega_3\omega_4^2c_s^2\omega_1^3 - 36\omega_3^2\omega_4c_s^2\omega_1^3v_3^2 - 36\omega_3\omega_4\omega_1^2v_3^4 - 3\omega_3^2\omega_4^2c_s^4\omega_1^3 + 54\omega_3\omega_4c_s^2\omega_1^3v_3^2 + 18\omega_3^2\omega_1^2v_3^2 + 9\omega_4^2\omega_1^3v_3^4 + 12\omega_3\omega_4^2c_s^2\omega_1^2 - 36\omega_3^2\omega_4^2c_s^2\omega_1v_3^2)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$

coefficient $C^{(1)}_{\mathrm{D}_z^4 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_3^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^4 v_3} = (-4 - 3c_s^2\omega - 5\omega v_3^2 + 2\omega + 6c_s^2 + 10v_3^2)\frac{\rho v_1 v_3}{12\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_3} = (-24\omega_6c_s^2\omega_{11}\omega_{18} + 36\omega_{11}^2\omega_{18} - 3\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{11}\omega_{18} + 60c_s^2\omega_{11}\omega_{18}^2 - 72\omega_6\omega_{11}^2\omega_{18} + 120\omega_6v_3^2\omega_{18}^2 + 24\omega_6^2\omega_{18}^2 - 84\omega_{11}^2v_3^2\omega_{18} - 48\omega_6c_s^2\omega_{11}^2 + 36\omega_6^2\omega_{11}v_3^2\omega_{18} + 61\omega_6^2\omega_{11}v_3^2\omega_{18}^2 + 24\omega_6\omega_{11}^2 - 36\omega_6^2c_s^2\omega_{18}^2 + 168\omega_6\omega_{11}^2v_3^2\omega_{18} - 120\omega_6c_s^2\omega_{11}\omega_{18}^2 - 48\omega_6\omega_{11}^2v_3^2 - 25\omega_6^2\omega_{11}\omega_{18}^2 - 33\omega_6^2c_s^2\omega_{11}^2\omega_{18} - 5\omega_6^2\omega_{11}^2v_3^2\omega_{18}^2 + 84\omega_{11}v_3^2\omega_{18}^2 + 12\omega_6^2c_s^2\omega_{11}\omega_{18} - 36\omega_{11}\omega_{18}^2 + 2\omega_6^2\omega_{11}^2\omega_{18}^2 - 72\omega_6\omega_{11}v_3^2\omega_{18} + 72\omega_6c_s^2\omega_{18}^2 + 72\omega_6\omega_{11}\omega_{18}^2 - 60c_s^2\omega_{11}^2\omega_{18} + 24\omega_6^2\omega_{11}^2v_3^2 - 12\omega_6^2\omega_{11}^2 + 24\omega_6\omega_{11}\omega_{18} - 48\omega_6\omega_{18}^2 - 168\omega_6\omega_{11}v_3^2\omega_{18}^2 + 120\omega_6c_s^2\omega_{11}^2\omega_{18} + 21\omega_6^2\omega_{11}^2\omega_{18} + 39\omega_6^2c_s^2\omega_{11}\omega_{18}^2 - 60\omega_6^2v_3^2\omega_{18}^2 + 24\omega_6^2c_s^2\omega_{11}^2 - 51\omega_6^2\omega_{11}^2v_3^2\omega_{18})\frac{\rho v_1 v_3}{12\omega_6^2\omega_{11}^2\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z^4 v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z^4 v_3} = (-4 - 3c_s^2\omega_{11} + 2\omega_{11} - 5\omega_{11}v_3^2 + 6c_s^2 + 10v_3^2)\frac{\rho v_1 v_3}{12\omega_{11}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z^4 v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z^4 v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z^4 v_3} = (-4 + 2\omega_6 - 3\omega_6c_s^2 + 6c_s^2 - 5\omega_6v_3^2 + 10v_3^2)\frac{\rho v_1 v_3}{12\omega_6}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z^4 v_3} = (10\omega_1v_3^2 - 15\omega_1\omega_2v_3^2 + 6\omega_1\omega_2 - 4\omega_1 + 6c_s^2\omega_1 - 8\omega_2 + 20\omega_2v_3^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2)\frac{\rho v_1 v_3}{36\omega_1\omega_2}$

3.3 Conservation of momentum: ρv_2

$$
\begin{aligned}
&v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + v_1v_2\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \rho v_2\frac{\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \rho v_1\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_1} + (c_s^2+v_2^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + 2\rho v_2\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + v_2v_3\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \rho v_3\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_3} + \\
&\rho v_2\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + C^{(2)}_{\mathrm{D}_x\rho,\mathrm{D}_xv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + C^{(2)}_{\mathrm{D}_x\rho,\mathrm{D}_yv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} + C^{(2)}_{\mathrm{D}_xv_1,\mathrm{D}_yv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_2} + C^{(2)}_{\mathrm{D}_y\rho,\mathrm{D}_xv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_1} + \\
&C^{(2)}_{\mathrm{D}_y\rho,\mathrm{D}_yv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + C^{(2)}_{\mathrm{D}_yv_2,\mathrm{D}_yv_2}\frac{\delta_l^2}{\delta_t}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + C^{(2)}_{\mathrm{D}_y\rho,\mathrm{D}_zv_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_3} + C^{(2)}_{\mathrm{D}_yv_3,\mathrm{D}_zv_3}\frac{\delta_l^2}{\delta_t}\frac{\partial v_3}{\partial x_2}\frac{\partial v_3}{\partial x_3} + \\
&C^{(2)}_{\mathrm{D}_z\rho,\mathrm{D}_yv_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} + C^{(2)}_{\mathrm{D}_z\rho,\mathrm{D}_zv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + C^{(2)}_{\mathrm{D}_x^2v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial^2v_2}{\partial x_1^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_1\partial x_2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_yv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial^2v_1}{\partial x_1\partial x_2} + \\
&C^{(2)}_{\mathrm{D}_y^2\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_2^2} + C^{(2)}_{\mathrm{D}_y^2v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial^2v_2}{\partial x_2^2} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_zv_3}\frac{\delta_l^2}{\delta_t}\frac{\partial^2v_3}{\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_z^2v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial^2v_2}{\partial x_3^2} + C^{(2)}_{\mathrm{D}_x^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + \\
&C^{(2)}_{\mathrm{D}_x^3v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_1}{\partial x_1^3} + C^{(2)}_{\mathrm{D}_x^3v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_2}{\partial x_1^3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_yv_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_1}{\partial x_1^2\partial x_2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_yv_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_2}{\partial x_1^2\partial x_2} + \\
&C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_1}{\partial x_1\partial x_2^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_2}{\partial x_1\partial x_2^2} + C^{(2)}_{\mathrm{D}_y^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C^{(2)}_{\mathrm{D}_y^3v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_2}{\partial x_2^3} + \\
&C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_zv_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_2}{\partial x_1^2\partial x_3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_zv_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_3}{\partial x_1^2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_zv_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_1}{\partial x_1\partial x_2\partial x_3} + \\
&C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_zv_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_3}{\partial x_1\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_zv_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_2}{\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_zv_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_3}{\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^2v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_1}{\partial x_1\partial x_3^2} + \\
&C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^2v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_2}{\partial x_1\partial x_3^2} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_2}{\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_3}{\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_z^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + \\
&C^{(2)}_{\mathrm{D}_z^3v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_2}{\partial x_3^3} + C^{(2)}_{\mathrm{D}_z^3v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3v_3}{\partial x_3^3} + C^{(2)}_{\mathrm{D}_x^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C^{(2)}_{\mathrm{D}_x^4v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_1}{\partial x_1^4} + C^{(2)}_{\mathrm{D}_x^4v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_2}{\partial x_1^4} + C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_y\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + \\
&C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_yv_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_1}{\partial x_1^3\partial x_2} + C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_yv_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_2}{\partial x_1^3\partial x_2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_1}{\partial x_1^2\partial x_2^2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_2}{\partial x_1^2\partial x_2^2} + \\
&C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^3v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_1}{\partial x_1\partial x_2^3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^3v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_2}{\partial x_1\partial x_2^3} + C^{(2)}_{\mathrm{D}_y^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C^{(2)}_{\mathrm{D}_y^4v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_2}{\partial x_2^4} + C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} \\
&+ C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_zv_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_1}{\partial x_1^3\partial x_3} + C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_zv_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_2}{\partial x_1^3\partial x_3} + C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_zv_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_3}{\partial x_1^3\partial x_3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + \\
&C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_zv_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_1}{\partial x_1^2\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_zv_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_2}{\partial x_1^2\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_zv_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_3}{\partial x_1^2\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + \\
&C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_zv_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_1}{\partial x_1\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_zv_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_2}{\partial x_1\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_zv_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4v_3}{\partial x_1\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} +
\end{aligned}
$$

$$C^{(2)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C^{(2)}_{\mathrm{D}_y^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2} +$$
$$C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_3^3} +$$
$$C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_3^3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2\partial x_3^3} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C^{(2)}_{\mathrm{D}_z^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_3^4} + C^{(2)}_{\mathrm{D}_z^4 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_3^4} + C^{(2)}_{\mathrm{D}_z^4 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

coefficient $C^{(2)}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}$ **at** $\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = (-2+\omega_5)\frac{c_s^2}{2\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1}$ **at** $\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = (-2+\omega_5)\frac{c_s^2}{2\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = (-2\omega_1 - 6v_1^2\omega_2 + 6c_s^2\omega_1 + 2\omega_2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 + 6\omega_1 v_1^2)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1}$ **at** $\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = (\omega_1 - \omega_2)\frac{2\rho v_1}{\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y \rho,\mathrm{D}_x v_1}$ **at** $\frac{\partial \rho}{\partial x_2}\frac{\partial v_1}{\partial x_1}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y \rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y \rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y \rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y \rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y \rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y \rho,\mathrm{D}_x v_1} = (-\omega_1 - 3v_1^2\omega_2 + c_s^2\omega_1 + \omega_2 - c_s^2\omega_2 + 3\omega_1 v_1^2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2}$ **at** $\frac{\partial \rho}{\partial x_2}\frac{\partial v_2}{\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2} = (-2 - 2c_s^2\omega - 3\omega v_2^2 + \omega + 4c_s^2 + 6v_2^2)\frac{1}{\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2} = (-2 + \omega_{10} - 2\omega_{10}c_s^2 + 4c_s^2 + 6v_2^2 - 3\omega_{10}v_2^2)\frac{1}{\omega_{10}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2} = (-2 - 2c_s^2\omega_5 - 3\omega_5 v_2^2 + \omega_5 + 4c_s^2 + 6v_2^2)\frac{1}{\omega_5}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_2} = (6\omega_1 v_2^2 + 12v_2^2\omega_2 + 3\omega_1\omega_2 - 2\omega_1 - 9\omega_1 v_2^2\omega_2 + 4c_s^2\omega_1 - 4\omega_2 + 8c_s^2\omega_2 - 6c_s^2\omega_1\omega_2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2}$ **at** $\left(\frac{\partial v_2}{\partial x_2}\right)^2$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = (2 - \omega)\frac{3\rho v_2}{\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = (2 - \omega_{10})\frac{3\rho v_2}{\omega_{10}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = (2 - \omega_5)\frac{3\rho v_2}{\omega_5}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = (-3\omega_1\omega_2 + 2\omega_1 + 4\omega_2)\frac{\rho v_2}{\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y \rho,\mathrm{D}_z v_3}$ **at** $\frac{\partial \rho}{\partial x_2}\frac{\partial v_3}{\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3} = (3\omega_1 v_3^2 - \omega_1 + c_s^2\omega_1 + \omega_2 - 3\omega_2 v_3^2 - c_s^2\omega_2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3}$ **at** $\frac{\partial v_3}{\partial x_2}\frac{\partial v_3}{\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = (\omega_1 - \omega_2)\frac{2\rho v_3}{\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3}$ **at** $\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = (-2+\omega_7)\frac{c_s^2}{2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = (-2+\omega_3)\frac{c_s^2}{2\omega_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = (6\omega_1 v_3^2 - 2\omega_1 + 6c_s^2\omega_1 + 2\omega_2 - 6\omega_2 v_3^2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2}$ **at** $\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = (-2+\omega_7)\frac{c_s^2}{2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = (-2+\omega_3)\frac{c_s^2}{2\omega_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_x^2 v_2}$ **at** $\frac{\partial^2 v_2}{\partial x_1^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2 v_2} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_2} = (-2+\omega_5)\frac{c_s^2\rho}{2\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2 v_2} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2 v_2} = C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2 v_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\rho}$ **at** $\frac{\partial^2\rho}{\partial x_1\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1 v_1^2)\frac{v_1}{3\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y v_1}$ **at** $\frac{\partial^2 v_1}{\partial x_1\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y v_1} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_1} = (-2+\omega_5)\frac{c_s^2\rho}{2\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y v_1} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y v_1} = (-2\omega_1 - 6v_1^2\omega_2 + 2c_s^2\omega_1 + 2\omega_2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 + 6\omega_1 v_1^2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^2\rho}{\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\rho} = (-2 - 3c_s^2\omega - \omega v_2^2 + \omega + 6c_s^2 + 2v_2^2)\frac{v_2}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\rho} = (-2 + \omega_{10} - 3\omega_{10}c_s^2 + 6c_s^2 + 2v_2^2 - \omega_{10}v_2^2)\frac{v_2}{2\omega_{10}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\rho} = (-2 - 3c_s^2\omega_5 - \omega_5 v_2^2 + \omega_5 + 6c_s^2 + 2v_2^2)\frac{v_2}{2\omega_5}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\rho} = (2\omega_1 v_2^2 + 4v_2^2\omega_2 + 3\omega_1\omega_2 - 2\omega_1 - 3\omega_1 v_2^2\omega_2 + 6c_s^2\omega_1 - 4\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2)\frac{v_2}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^2 v_2}{\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2 v_2} = (-2 - c_s^2\omega - 3\omega v_2^2 + \omega + 2c_s^2 + 6v_2^2)\frac{\rho}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_2} = (-2 + \omega_{10} - \omega_{10}c_s^2 + 2c_s^2 + 6v_2^2 - 3\omega_{10}v_2^2)\frac{\rho}{2\omega_{10}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2 v_2} = (-2 - c_s^2\omega_5 - 3\omega_5 v_2^2 + \omega_5 + 2c_s^2 + 6v_2^2)\frac{\rho}{2\omega_5}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2 v_2} = (6\omega_1 v_2^2 + 12v_2^2\omega_2 + 3\omega_1\omega_2 - 2\omega_1 - 9\omega_1 v_2^2\omega_2 + 2c_s^2\omega_1 - 4\omega_2 + 4c_s^2\omega_2 - 3c_s^2\omega_1\omega_2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^2\rho}{\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = (\omega_1 v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2 v_3^2 - 3c_s^2\omega_2)\frac{v_3}{3\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^2 v_3}{\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z v_3} = (-2 + \omega)\frac{c_s^2\rho}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_3} = (-2 + \omega_7)\frac{c_s^2\rho}{2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z v_3} = (-2 + \omega_3)\frac{c_s^2\rho}{2\omega_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z v_3} = (6\omega_1 v_3^2 - 2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 - 6\omega_2 v_3^2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^2 v_2}{\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^2 v_2} = (-2 + \omega)\frac{c_s^2\rho}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_z v_2} = (-2+\omega_7)\frac{c_s^2\rho}{2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^2_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^2_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_z v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^2_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_z v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^2_z v_2} = (-2+\omega_3)\frac{c_s^2\rho}{2\omega_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^2_z v_2} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}^3_x \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \rho} = (-1+v_1^2+3c_s^2)\frac{v_1 v_2}{12}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x \rho} = (v_1^2\omega_5\omega_9\omega_{12} - 6\omega_5\omega_9 + 6\omega_5\omega_{12} + 6v_1^2\omega_5\omega_9 - 6v_1^2\omega_5\omega_{12} - \omega_5\omega_9\omega_{12} - 18c_s^2\omega_5\omega_{12} + 18c_s^2\omega_5\omega_9 - 36c_s^2\omega_9 + 36c_s^2\omega_{12} + 12v_1^2\omega_{12} - 12v_1^2\omega_9 + 3c_s^2\omega_5\omega_9\omega_{12} + 12\omega_9 - 12\omega_{12})\frac{v_1 v_2}{12\omega_5\omega_9\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_x \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x \rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x \rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_x \rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_x \rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_x \rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

coefficient $C^{(2)}_{\mathrm{D}^3_x v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_1} = (-1+3v_1^2+c_s^2)\frac{\rho v_2}{12}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1} = (3v_1^2\omega_5\omega_9\omega_{12} - 6\omega_5\omega_9 + 6\omega_5\omega_{12} + 18v_1^2\omega_5\omega_9 - 18v_1^2\omega_5\omega_{12} - \omega_5\omega_9\omega_{12} - 6c_s^2\omega_5\omega_{12} + 6c_s^2\omega_5\omega_9 - 12c_s^2\omega_9 + 12c_s^2\omega_{12} + 36v_1^2\omega_{12} - 36v_1^2\omega_9 + c_s^2\omega_5\omega_9\omega_{12} + 12\omega_9 - 12\omega_{12})\frac{\rho v_2}{12\omega_5\omega_9\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_x v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_x v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_x v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_x v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

coefficient $C^{(2)}_{\mathrm{D}^3_x v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_2} = (6-6v_1^2+18c_s^2\omega+\omega^2-\omega^2v_1^2-3c_s^2\omega^2-6\omega+6\omega v_1^2-18c_s^2)\frac{\rho v_1}{6\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x v_2} = (-3\omega_5^2+3v_1^2\omega_5^2-6c_s^2\omega_5-3\omega_5\omega_{12}-6v_1^2\omega_5+3c_s^2\omega_5^2-3c_s^2\omega_5^2\omega_{12}+3v_1^2\omega_5\omega_{12}+15c_s^2\omega_5\omega_{12}-v_1^2\omega_5^2\omega_{12}+6\omega_5-12c_s^2\omega_{12}+\omega_5^2\omega_{12})\frac{\rho v_1}{6\omega_5^2\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_x v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_2} = (6-6v_1^2+9c_s^2\omega_5+\omega_5\omega_{12}+3v_1^2\omega_5-v_1^2\omega_5\omega_{12}-3c_s^2\omega_5\omega_{12}-3\omega_5+9c_s^2\omega_{12}-18c_s^2+3v_1^2\omega_{12}-3\omega_{12})\frac{\rho v_1}{6\omega_5\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_x v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_x v_2} = (6 - 6v_1^2 - \omega_1 v_1^2 \omega_9 + \omega_1\omega_9 - 3\omega_1 - 3c_s^2\omega_1\omega_9 + 9c_s^2\omega_9 + 9c_s^2\omega_1 - 18c_s^2 + 3v_1^2\omega_9 + 3\omega_1 v_1^2 - 3\omega_9)\frac{\rho v_1}{6\omega_1\omega_9}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_x v_2} = (-2\omega_3\omega_4\omega_1 v_1^2 + 6\omega_3 - 18\omega_4 c_s^2 + 3\omega_3\omega_1 v_1^2 - 3\omega_4\omega_1 - 6\omega_3\omega_4 c_s^2\omega_1 - 6\omega_3 v_1^2 + 9\omega_3 c_s^2\omega_1 + 6\omega_4 + 6\omega_3\omega_4 v_1^2 - 3\omega_3\omega_1 + 2\omega_3\omega_4\omega_1 - 6\omega_4 v_1^2 - 6\omega_3\omega_4 + 3\omega_4\omega_1 v_1^2 + 18\omega_3\omega_4 c_s^2 - 18\omega_3 c_s^2 + 9\omega_4 c_s^2\omega_1)\frac{\rho v_1}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}^2_x \mathrm{D}_y \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1^2 \partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = (-12 - \omega^2 + 12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = (-12 - \omega_5^2 + 12\omega_5)\frac{c_s^4}{6\omega_5^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y \rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y \rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y \rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = (-12 + 12\omega_1 - \omega_1^2)\frac{c_s^4}{6\omega_1^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = (-c_s^4\omega_1^2\omega_2^2 - 14c_s^4\omega_2^2 - 3\omega_1^2 v_1^4\omega_2 - 2\omega_1^2 v_1^2 + 6c_s^2\omega_1 v_1^2\omega_2 - 3\omega_1 v_1^2\omega_2^2 + 2c_s^2\omega_1^2\omega_2 + 15c_s^2\omega_1 v_1^2\omega_2^2 - 18c_s^2 v_1^2\omega_2^2 + 2c_s^4\omega_1^2 - 2\omega_1 v_1^2\omega_2 - 2c_s^4\omega_1^2\omega_2 - 4v_1^4\omega_2^2 - 2c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_2^2 + 3\omega_1^2 v_1^2\omega_2 + 12c_s^2\omega_1^2 v_1^2 + 3\omega_1 v_1^4\omega_2^2 + 2\omega_1 v_1^4\omega_2 - 2c_s^2\omega_1^2 + 2\omega_1^2 v_1^4 + 4v_1^2\omega_2^2 - 15c_s^2\omega_1^2 v_1^2\omega_2 + 14c_s^4\omega_1\omega_2^2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}^2_x \mathrm{D}_y v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^2 \partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = (-\omega_5^2 + \omega_5\omega_{12} + 2\omega_5 - 2\omega_{12})\frac{c_s^2\rho v_1}{\omega_5^2\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = (8\omega_1^2 v_1^2 + 11\omega_1 v_1^2\omega_2^2 - 5\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 + 6\omega_1 v_1^2\omega_2 - 2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 10c_s^2\omega_2^2 - 11\omega_1^2 v_1^2\omega_2 + 8c_s^2\omega_1^2 + 2c_s^2\omega_1\omega_2 - 14v_1^2\omega_2^2 + 6\omega_2^2)\frac{\rho v_1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}^2_x \mathrm{D}_y v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1^2 \partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_y v_2} = \frac{-c_s^2\rho v_2}{6}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y v_2} = (-12\omega_{10}\omega_5^2 + 12\omega_5^2 + 12\omega_{10}\omega_5\omega_{15} - 12\omega_5\omega_{15} + 12\omega_{10}\omega_5 - 12\omega_{10}\omega_{15} - \omega_{10}\omega_5^2\omega_{15})\frac{c_s^2\rho v_2}{6\omega_{10}\omega_5^2\omega_{15}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_y v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^2_x \mathrm{D}_y v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (-\omega_{10}^2v_2^2 + \omega_{10}\omega_5\omega_{15} - \omega_5\omega_{15} - 3\omega_{10}c_s^2\omega_5 + \omega_{10}v_2^2\omega_{15} - \omega_{10}\omega_5v_2^2 - 3\omega_{10}^2c_s^2 + \omega_{10}\omega_5 + \omega_5v_2^2\omega_{15} - \omega_{10}^2\omega_5 + 3\omega_{10}c_s^2\omega_{15} - \omega_{10}\omega_5v_2^2\omega_{15} + 3c_s^2\omega_5\omega_{15} - 3\omega_{10}c_s^2\omega_5\omega_{15} - \omega_{10}\omega_{15} + \omega_{10}^2 + 3\omega_{10}^2c_s^2\omega_5 + \omega_{10}^2\omega_5v_2^2)\frac{v_1v_2}{\omega_{10}^2\omega_5\omega_{15}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (2\omega_1^2v_1^2 + 2v_2^2\omega_2^2 + 3\omega_1v_1^2\omega_2^2 - 3\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1v_1^2\omega_2 + 2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_2^2 - 3\omega_1^2v_1^2\omega_2 - 4\omega_1v_2^2\omega_2 + 12c_s^2\omega_1^2 - 6c_s^2\omega_1\omega_2 - 4v_1^2\omega_2^2 + 2\omega_1^2v_2^2 + 2\omega_2^2)\frac{v_1v_2}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (12 + 36c_s^2\omega + 3\omega^2 + 12\omega v_2^2 - 11c_s^2\omega^2 - 12\omega - 3\omega^2v_2^2 - 36c_s^2 - 12v_2^2)\frac{\rho v_2}{12\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (6\omega_{10}^2\omega_5v_2^2\omega_{15} + 12\omega_{10}\omega_5^2 + 12\omega_{10}^2\omega_5^2v_2^2 + 42\omega_{10}^2c_s^2\omega_5\omega_{15} + 3\omega_{10}^2\omega_5^2\omega_{15} + 36c_s^2\omega_5^2\omega_{15} + 12\omega_5^2v_2^2\omega_{15} - 12\omega_{10}c_s^2\omega_5^2 - 24\omega_{10}^2c_s^2\omega_{15} - 6\omega_{10}\omega_5^2v_2^2\omega_{15} - 18\omega_{10}c_s^2\omega_5^2\omega_{15} + 12\omega_{10}^2\omega_5 + 12\omega_{10}^2c_s^2\omega_5^2 - 24\omega_{10}c_s^2\omega_5\omega_{15} - 11\omega_{10}^2c_s^2\omega_5^2\omega_{15} - 3\omega_{10}^2\omega_5^2v_2^2\omega_{15} - 12\omega_{10}\omega_5^2v_2^2 - 6\omega_{10}^2\omega_5\omega_{15} - 12\omega_{10}^2\omega_5^2 - 12\omega_{10}^2c_s^2\omega_5 + 6\omega_{10}\omega_5^2\omega_{15} - 12\omega_{10}^2\omega_5v_2^2 - 12\omega_5^2\omega_{15})\frac{\rho v_2}{12\omega_{10}^2\omega_5^2\omega_{15}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} =$
$(-3\omega_{10}^2\omega_5v_2^2\omega_{15} - 12\omega_{10}^2v_2^2 + 6\omega_{10}\omega_5\omega_{15} - 12\omega_5\omega_{15} - 36\omega_{10}c_s^2\omega_5 - 11\omega_{10}^2c_s^2\omega_5\omega_{15} - 6\omega_{10}^2\omega_{15} - 12\omega_{10}\omega_5v_2^2 + 18\omega_{10}^2c_s^2\omega_{15} - 36\omega_{10}^2c_s^2 + 12\omega_{10}\omega_5 + 12\omega_5v_2^2\omega_{15} - 12\omega_{10}^2\omega_5 - 6\omega_{10}\omega_5v_2^2\omega_{15} + 36c_s^2\omega_5\omega_{15} - 18\omega_{10}c_s^2\omega_5\omega_{15} + 3\omega_{10}^2\omega_5\omega_{15} + 12\omega_{10}^2 + 6\omega_{10}^2v_2^2\omega_{15} + 36\omega_{10}^2c_s^2\omega_5 + 12\omega_{10}^2\omega_5v_2^2)\frac{\rho v_2}{12\omega_{10}^2\omega_5\omega_{15}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (36\omega_7c_s^2\omega_1 + 12\omega_5^2 + 12\omega_1\omega_5^2v_2^2 + 6\omega_7\omega_1\omega_5 - 36c_s^2\omega_1\omega_5 - 11\omega_7c_s^2\omega_1\omega_5^2 - 18\omega_7c_s^2\omega_1\omega_5 + 3\omega_7\omega_1\omega_5^2 - 6\omega_7\omega_5^2 + 36c_s^2\omega_1\omega_5^2 - 36c_s^2\omega_5^2 + 6\omega_7\omega_5^2v_2^2 - 3\omega_7\omega_1\omega_5^2v_2^2 + 12\omega_1\omega_5 - 6\omega_7\omega_1\omega_5v_2^2 - 12\omega_7\omega_1 + 12\omega_7\omega_1v_2^2 - 12\omega_5^2v_2^2 - 12\omega_1\omega_5^2 + 18\omega_7c_s^2\omega_5^2 - 12\omega_1\omega_5v_2^2)\frac{\rho v_2}{12\omega_7\omega_1\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (-36\omega_3c_s^2\omega_1\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 4\omega_3\omega_4\omega_1^2v_2^2 - 24\omega_4c_s^2\omega_1\omega_2^2 - 24\omega_3\omega_4v_1^2\omega_2^2 + 2\omega_3\omega_4\omega_1v_2^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 + 4\omega_3\omega_4c_s^2\omega_1\omega_2 + 16\omega_3\omega_4c_s^2\omega_1^2 + 8\omega_4\omega_1\omega_2^2 - 18\omega_3\omega_4\omega_1^2v_1^2\omega_2 + 16\omega_3\omega_4c_s^2\omega_2^2 + 12\omega_3\omega_4c_s^2\omega_1\omega_2^2 - 8\omega_4\omega_1v_2^2\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 12\omega_3\omega_1v_2^2\omega_2^2 - 12\omega_4c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1^2v_2^2\omega_2 + 12\omega_3\omega_4\omega_1v_1^2\omega_2 - 6\omega_4\omega_1^2\omega_2^2 + 6\omega_4\omega_1^2v_2^2\omega_2^2 + 6\omega_3\omega_1^2v_2^2\omega_2^2 - 11\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 12\omega_3\omega_4c_s^2\omega_1^2\omega_2 + 12\omega_3\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 - 4\omega_4\omega_1^2v_2^2\omega_2 - 8\omega_3\omega_4\omega_1\omega_2^2 + 18\omega_3c_s^2\omega_1^2\omega_2^2 - 8\omega_3\omega_4\omega_1^2 - 3\omega_3\omega_4\omega_1^2v_2^2\omega_2^2 + 18\omega_3\omega_4\omega_1v_1^2\omega_2^2 + 8\omega_3\omega_4v_2^2\omega_2^2 + 18\omega_4c_s^2\omega_1^2\omega_2^2 + 12\omega_3\omega_4\omega_1^2v_1^2)\frac{\rho v_2}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = (-3\omega_{10}^2v_2^2 + \omega_{10}\omega_5\omega_{15} - \omega_5\omega_{15} - \omega_{10}c_s^2\omega_5 + 3\omega_{10}v_2^2\omega_{15} - 3\omega_{10}\omega_5v_2^2 - \omega_{10}^2c_s^2 + \omega_{10}\omega_5 + 3\omega_5v_2^2\omega_{15} - \omega_{10}^2\omega_5 + \omega_{10}c_s^2\omega_{15} - 3\omega_{10}\omega_5v_2^2\omega_{15} + c_s^2\omega_5\omega_{15} - \omega_{10}c_s^2\omega_5\omega_{15} - \omega_{10}\omega_{15} + \omega_{10}^2 + \omega_{10}^2c_s^2\omega_5 + 3\omega_{10}^2\omega_5v_2^2)\frac{\rho v_1}{\omega_{10}^2\omega_5\omega_{15}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = (3\omega_3 c_s^2\omega_1\omega_2^2 - 12\omega_3\omega_1 v_2^2\omega_2 - 2\omega_3 v_1^2\omega_2^2 - \omega_3\omega_1^2 v_1^2\omega_2 + 2\omega_1 v_1^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - 2\omega_1\omega_2^2 - 6c_s^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2 v_2^2 + \omega_3\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 - 4\omega_3 c_s^2\omega_2^2 + 2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + 6c_s^2\omega_1\omega_2^2 - 2\omega_1^2 v_1^2\omega_2 + \omega_3\omega_1 v_1^2\omega_2^2 + 4\omega_3\omega_1\omega_2 + 6\omega_3 v_2^2\omega_2^2 - \omega_3\omega_1\omega_2^2 + 2\omega_3\omega_1^2 v_1^2 - 4\omega_3\omega_1^2)\frac{\rho v_1}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y^3\rho}$ at $\frac{\partial^3\rho}{\partial x_2^3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^3\rho} = (24c_s^2\omega^2 v_2^2 + 12c_s^2\omega + 36v_2^4 + 36\omega v_2^2 - c_s^2\omega^2 + 12c_s^4 + 7\omega^2 v_2^4 - 36\omega v_2^4 - 7\omega^2 v_2^2 + 144c_s^2 v_2^2 - 12c_s^4\omega - 12c_s^2 + c_s^4\omega^2 - 36v_2^2 - 144c_s^2\omega v_2^2)\frac{1}{12\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho} = (-7\omega_{10}^2 v_2^2 + 36v_2^4 - 36\omega_{10} v_2^4 - \omega_{10}^2 c_s^2 - 12\omega_{10} c_s^4 + 12c_s^4 + 24\omega_{10}^2 c_s^2 v_2^2 + \omega_{10}^2 c_s^4 + 12\omega_{10} c_s^2 + 144c_s^2 v_2^2 - 144\omega_{10} c_s^2 v_2^2 - 12c_s^2 + 7\omega_{10}^2 v_2^4 - 36v_2^2 + 36\omega_{10} v_2^2)\frac{1}{12\omega_{10}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\rho} =$
$(7\omega_5^2 v_2^4 + 12c_s^2\omega_5 + 36v_2^4 + 36\omega_5 v_2^2 - c_s^2\omega_5^2 + 24c_s^2\omega_5^2 v_2^2 + 12c_s^4 - 144c_s^2\omega_5 v_2^2 - 12c_s^4\omega_5 + 144c_s^2 v_2^2 - 12c_s^2 - 7\omega_5^2 v_2^2 - 36v_2^2 - 36\omega_5 v_2^4 + c_s^4\omega_5^2)\frac{1}{12\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\rho} = (c_s^4\omega_1^2\omega_2^2 + 8c_s^4\omega_2^2 + 16\omega_1 v_2^4\omega_2 - 16v_2^2\omega_2^2 - 7\omega_1^2 v_2^2\omega_2^2 - 48c_s^2\omega_1^2 v_2^2\omega_2 + 4c_s^2\omega_1^2\omega_2 + 4\omega_1^2 v_2^4 - c_s^2\omega_1^2\omega_2^2 + 24c_s^2\omega_1^2 v_2^2 + 12\omega_1^2 v_2^2\omega_2 + 4c_s^4\omega_1^2 + 24c_s^2\omega_1^2 v_2^2\omega_2^2 - 4c_s^4\omega_1^2\omega_2 - 24\omega_1 v_2^4\omega_2^2 + 8c_s^2\omega_1\omega_2^2 - 8c_s^2\omega_2^2 + 72c_s^2 v_2^2\omega_2^2 - 96c_s^2\omega_1 v_2^2\omega_2^2 - 16\omega_1 v_2^2\omega_2 + 7\omega_1^2 v_2^4\omega_2^2 + 16v_2^4\omega_2^2 - 12\omega_1^2 v_2^4\omega_2 - 4c_s^2\omega_1^2 + 48c_s^2\omega_1 v_2^2\omega_2 + 24\omega_1 v_2^2\omega_2^2 - 8c_s^4\omega_1\omega_2^2 - 4\omega_1^2 v_2^2)\frac{1}{12\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y^3 v_2}$ at $\frac{\partial^3 v_2}{\partial x_2^3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^3 v_2} = (-24 - 36c_s^2\omega - 4\omega^2 - 60\omega v_2^2 + 5c_s^2\omega^2 + 24\omega + 11\omega^2 v_2^2 + 36c_s^2 + 60v_2^2)\frac{\rho v_2}{6\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_2} = (-24 + 11\omega_{10}^2 v_2^2 + 24\omega_{10} + 5\omega_{10}^2 c_s^2 - 36\omega_{10} c_s^2 + 36c_s^2 - 4\omega_{10}^2 + 60v_2^2 - 60\omega_{10} v_2^2)\frac{\rho v_2}{6\omega_{10}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^3 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^3 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^3 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^3 v_2} = (-24 - 4\omega_5^2 - 36c_s^2\omega_5 - 60\omega_5 v_2^2 + 5c_s^2\omega_5^2 + 24\omega_5 + 36c_s^2 + 11\omega_5^2 v_2^2 + 60v_2^2)\frac{\rho v_2}{6\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^3 v_2} = (28v_2^2\omega_2^2 + 11\omega_1^2 v_2^2\omega_2^2 + 16\omega_1\omega_2^2 - 12c_s^2\omega_1^2\omega_2 + 5c_s^2\omega_1^2\omega_2^2 - 20\omega_1^2 v_2^2\omega_2 - 8\omega_1\omega_2 + 8\omega_1^2\omega_2 - 4\omega_1^2 - 24c_s^2\omega_1\omega_2^2 + 20c_s^2\omega_2^2 + 24\omega_1 v_2^2\omega_2 + 8c_s^2\omega_1^2 + 8c_s^2\omega_1\omega_2 - 40\omega_1 v_2^2\omega_2^2 + 8\omega_1^2 v_2^2 - 12\omega_2^2 - 4\omega_1^2\omega_2^2)\frac{\rho v_2}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z v_2}$ at $\frac{\partial^3 v_2}{\partial x_1^2\partial x_3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = (\omega_5^2 - \omega_7\omega_8 + \omega_7\omega_5 - \omega_7\omega_5^2 + \omega_7\omega_8\omega_5 - \omega_8\omega_5)\frac{c_s^2\rho v_3}{\omega_7\omega_8\omega_5^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = (-2\omega_3 - 6\omega_4 c_s^2 - \omega_4\omega_1 + \omega_4\omega_1 v_3^2 - 2\omega_4 v_3^2 - 3\omega_3 c_s^2\omega_1 + 2\omega_4 + \omega_3\omega_1 + 2\omega_3 v_3^2 - \omega_3\omega_1 v_3^2 + 6\omega_3 c_s^2 + 3\omega_4 c_s^2\omega_1)\frac{\rho v_3}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = \frac{-c_s^2\rho v_2}{6}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (-6\omega_6\omega_7\omega_5 - \omega_6\omega_7\omega_8\omega_5 - 6\omega_7\omega_8 + 6\omega_7\omega_8\omega_5 + 6\omega_6\omega_5 + 6\omega_6\omega_7 - 6\omega_8\omega_5)\frac{c_s^2\rho v_2}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = (\omega_1^2 v_1^2 - 2\omega_1\omega_2 v_3^2 + \omega_2^2 v_3^2 - 2\omega_1 v_1^2\omega_2 + 4\omega_1\omega_2 - 2\omega_1^2 + 6c_s^2\omega_2^2 + 6c_s^2\omega_1^2 - 12c_s^2\omega_1\omega_2 + v_1^2\omega_2^2 - 2\omega_2^2 + \omega_1^2 v_3^2)\frac{v_1 v_3}{3\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = (\omega_5^2 - \omega_7\omega_8 + \omega_7\omega_5 - \omega_7\omega_5^2 + \omega_7\omega_8\omega_5 - \omega_8\omega_5)\frac{c_s^2\rho v_3}{\omega_7\omega_8\omega_5^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = (18\omega_3 c_s^2\omega_1\omega_2^2 + \omega_3\omega_4\omega_1\omega_2^2 v_3^2 + 2\omega_3\omega_4\omega_1^2 v_3^2 - 12\omega_4 c_s^2\omega_1\omega_2^2 + 6\omega_3\omega_4 v_1^2\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 - \omega_3\omega_4\omega_1^2\omega_2 v_3^2 - 4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 8\omega_3\omega_4 c_s^2\omega_1^2 + 4\omega_4\omega_1\omega_2^2 - 4\omega_4\omega_1\omega_2^2 v_3^2 - 4\omega_3\omega_4 c_s^2\omega_2^2 + 6\omega_3\omega_1\omega_2^2 v_3^2 + 3\omega_3\omega_4 c_s^2\omega_1\omega_2^2 - 2\omega_4\omega_1^2\omega_2 v_3^2 + \omega_3\omega_4\omega_1^2\omega_2 + 3\omega_4\omega_1^2\omega_2^2 v_3^2 - 6\omega_4 c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1\omega_2 - 3\omega_3\omega_1^2\omega_2^2 v_3^2 - 12\omega_3\omega_4\omega_1 v_1^2\omega_2 - 3\omega_4\omega_1^2\omega_2^2 - 3\omega_3\omega_4 c_s^2\omega_1^2\omega_2 - 6\omega_3\omega_1\omega_2^2 - 2\omega_3\omega_4\omega_2^2 v_3^2 + 2\omega_4\omega_1^2\omega_2 - \omega_3\omega_4\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1^2 + 9\omega_4 c_s^2\omega_1^2\omega_2^2 + 6\omega_3\omega_4\omega_1^2 v_1^2)\frac{\rho v_3}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = (-\omega_7\omega_8 + \omega_7\omega_5 + \omega_7\omega_8\omega_5 - \omega_7^2\omega_5 + \omega_7^2 - \omega_8\omega_5)\frac{c_s^2\rho v_1}{\omega_7^2\omega_8\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = (18\omega_3 c_s^2\omega_1\omega_2^2 + 6\omega_3\omega_4\omega_1^2 v_3^2 - 12\omega_4 c_s^2\omega_1\omega_2^2 - 2\omega_4\omega_1^2 v_1^2\omega_2 - 2\omega_3\omega_4 v_1^2\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 - 4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 8\omega_3\omega_4 c_s^2\omega_1^2 + 4\omega_4\omega_1\omega_2^2 - \omega_3\omega_4\omega_1^2 v_1^2\omega_2 - 4\omega_3\omega_4 c_s^2\omega_2^2 + 3\omega_3\omega_4 c_s^2\omega_1\omega_2^2 + 3\omega_4\omega_1^2 v_1^2\omega_2^2 + \omega_3\omega_4\omega_1^2\omega_2 - 3\omega_3\omega_1^2 v_1^2\omega_2^2 - 6\omega_4 c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1\omega_2 - 3\omega_4\omega_1^2\omega_2^2 - 4\omega_4\omega_1 v_1^2\omega_2^2 + 6\omega_3\omega_1 v_1^2\omega_2^2 - 3\omega_3\omega_4 c_s^2\omega_1^2\omega_2 - 6\omega_3\omega_1\omega_2^2 + 6\omega_3\omega_4\omega_2^2 v_3^2 + 2\omega_4\omega_1^2\omega_2 - 12\omega_3\omega_4\omega_1\omega_2 v_3^2 - \omega_3\omega_4\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1^2 + \omega_3\omega_4\omega_1 v_1^2\omega_2^2 + 9\omega_4 c_s^2\omega_1^2\omega_2^2 + 2\omega_3\omega_4\omega_1^2 v_1^2)\frac{\rho v_1}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$ **at** $\frac{\partial^3\rho}{\partial x_2^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (-\omega_{10}^2 v_2^2 + \omega_{16}\omega_{10} v_2^2 + 3\omega_{16}\omega_7 c_s^2 + 3\omega_{10}^2\omega_7 c_s^2 - \omega_{16}\omega_{10}\omega_7 v_2^2 - \omega_{16}\omega_7 - \omega_{10}^2\omega_7 - 3\omega_{10}^2 c_s^2 - 3\omega_{16}\omega_{10}\omega_7 c_s^2 + \omega_{10}^2\omega_7 v_2^2 + \omega_{16}\omega_{10}\omega_7 + 3\omega_{16}\omega_{10} c_s^2 + \omega_{16}\omega_7 v_2^2 - \omega_{16}\omega_{10} + \omega_{10}\omega_7 - \omega_{10}\omega_7 v_2^2 - 3\omega_{10}\omega_7 c_s^2 + \omega_{10}^2)\frac{v_2 v_3}{\omega_{16}\omega_{10}^2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (2v_2^2\omega_2^2 + 2\omega_1\omega_2 v_3^2 - 3\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 4\omega_2^2 v_3^2 + 2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_2^2 - 4\omega_1 v_2^2\omega_2 + 12c_s^2\omega_1^2 - 3\omega_1^2\omega_2 v_3^2 - 6c_s^2\omega_1\omega_2 + 2\omega_1^2 v_2^2 + 2\omega_2^2 + 2\omega_1^2 v_3^2 + 3\omega_1\omega_2^2 v_3^2)\frac{v_2 v_3}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = (-3\omega_{10}^2 v_2^2 + 3\omega_{16}\omega_{10} v_2^2 + \omega_{16}\omega_7 c_s^2 + \omega_{10}^2\omega_7 c_s^2 - 3\omega_{16}\omega_{10}\omega_7 v_2^2 - \omega_{16}\omega_7 - \omega_{10}^2\omega_7 - \omega_{10}^2 c_s^2 - \omega_{16}\omega_{10}\omega_7 c_s^2 + 3\omega_{10}^2\omega_7 v_2^2 + \omega_{16}\omega_{10}\omega_7 + \omega_{16}\omega_{10} c_s^2 + 3\omega_{16}\omega_7 v_2^2 - \omega_{16}\omega_{10} + \omega_{10}\omega_7 - 3\omega_{10}\omega_7 v_2^2 - \omega_{10}\omega_7 c_s^2 + \omega_{10}^2)\frac{\rho v_3}{\omega_{16}\omega_{10}^2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = (3\omega_3 c_s^2\omega_1\omega_2^2 - 12\omega_3\omega_1 v_2^2\omega_2 + 8\omega_3 c_s^2\omega_1^2 - 2\omega_1\omega_2^2 + 2\omega_3\omega_1^2 v_3^2 - 6c_s^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2 v_2^2 + \omega_3\omega_1^2\omega_2 + \omega_3\omega_1\omega_2^2 v_3^2 - \omega_3\omega_1^2\omega_2 v_3^2 - 4\omega_3 c_s^2\omega_1\omega_2 - 4\omega_3 c_s^2\omega_2^2 + 2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + 6c_s^2\omega_1\omega_2^2 + 4\omega_3\omega_1\omega_2 + 6\omega_3 v_2^2\omega_2^2 - \omega_3\omega_1\omega_2^2 - 2\omega_1^2\omega_2 v_3^2 - 2\omega_3\omega_2^2 v_3^2 - 4\omega_3\omega_1^2 + 2\omega_1\omega_2^2 v_3^2)\frac{\rho v_3}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (12 + 36c_s^2\omega + 3\omega^2 + 12\omega v_2^2 - 11c_s^2\omega^2 - 12\omega - 3\omega^2 v_2^2 - 36c_s^2 - 12v_2^2)\frac{\rho v_2}{12\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (-12\omega_{10}\omega_7^2 c_s^2 - 3\omega_{16}\omega_{10}^2\omega_7^2 v_2^2 + 6\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{16}\omega_7^2 - 12\omega_{10}^2\omega_7^2 - 12\omega_{10}^2\omega_7 c_s^2 + 12\omega_{10}^2\omega_7 - 11\omega_{16}\omega_{10}^2\omega_7^2 c_s^2 - 12\omega_{10}\omega_7^2 v_2^2 - 24\omega_{16}\omega_{10}\omega_7 c_s^2 - 12\omega_{10}^2\omega_7 v_2^2 - 18\omega_{16}\omega_{10}\omega_7^2 c_s^2 + 12\omega_{10}^2\omega_7^2 v_2^2 + 12\omega_{16}\omega_7^2 v_2^2 - 24\omega_{16}\omega_{10}^2 c_s^2 - 6\omega_{16}\omega_{10}^2\omega_7 + 42\omega_{16}\omega_{10}^2\omega_7 c_s^2 + 12\omega_{10}\omega_7^2 + 36\omega_{16}\omega_7^2 c_s^2 + 12\omega_{10}^2\omega_7^2 c_s^2 - 6\omega_{16}\omega_{10}\omega_7^2 v_2^2 + 6\omega_{16}\omega_{10}^2\omega_7 v_2^2 + 3\omega_{16}\omega_{10}^2\omega_7^2)\frac{\rho v_2}{12\omega_{16}\omega_{10}^2\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} =$
$(-6\omega_{16}\omega_{10}^2 - 12\omega_{10}^2 v_2^2 + 36\omega_{16}\omega_7 c_s^2 + 36\omega_{10}^2\omega_7 c_s^2 - 6\omega_{16}\omega_{10}\omega_7 v_2^2 - 12\omega_{16}\omega_7 - 12\omega_{10}^2\omega_7 - 36\omega_{10}^2 c_s^2 - 18\omega_{16}\omega_{10}\omega_7 c_s^2 + 12\omega_{10}^2\omega_7 v_2^2 + 6\omega_{16}\omega_{10}\omega_7 + 12\omega_{16}\omega_7 v_2^2 + 18\omega_{16}\omega_{10}^2 c_s^2 + 3\omega_{16}\omega_{10}^2\omega_7 + 12\omega_{10}\omega_7 - 11\omega_{16}\omega_{10}^2\omega_7 c_s^2 - 12\omega_{10}\omega_7 v_2^2 + 6\omega_{16}\omega_{10}^2 v_2^2 - 36\omega_{10}\omega_7 c_s^2 + 12\omega_{10}^2 - 3\omega_{16}\omega_{10}^2\omega_7 v_2^2)\frac{\rho v_2}{12\omega_{16}\omega_{10}^2\omega_7}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (12\omega_3\omega_5^2 v_2^2 + 12\omega_5^2 - 6\omega_3\omega_{11}\omega_5 v_2^2 + 12\omega_3\omega_5 - 18\omega_3 c_s^2\omega_{11}\omega_5 - 6\omega_{11}\omega_5^2 + 6\omega_{11}\omega_5^2 v_2^2 - 12\omega_3\omega_{11} - 11\omega_3 c_s^2\omega_{11}\omega_5^2 - 36c_s^2\omega_5^2 - 12\omega_3\omega_5^2 + 12\omega_3\omega_{11} v_2^2 + 36\omega_3 c_s^2\omega_5^2 + 3\omega_3\omega_{11}\omega_5^2 + 36\omega_3 c_s^2\omega_{11} - 12\omega_5^2 v_2^2 + 6\omega_3\omega_{11}\omega_5 - 12\omega_3\omega_5 v_2^2 - 3\omega_3\omega_{11}\omega_5^2 v_2^2 + 18c_s^2\omega_{11}\omega_5^2 - 36\omega_3 c_s^2\omega_5)\frac{\rho v_2}{12\omega_3\omega_{11}\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} =$
$(-36\omega_3 c_s^2\omega_1\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 18\omega_3\omega_4\omega_1\omega_2^2 v_3^2 + 12\omega_3\omega_4\omega_1^2 v_3^2 + 4\omega_3\omega_4\omega_1^2 v_2^2 - 24\omega_4 c_s^2\omega_1\omega_2^2 + 2\omega_3\omega_4\omega_1 v_2^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 - 18\omega_3\omega_4\omega_1^2\omega_2 v_3^2 + 4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 16\omega_3\omega_4 c_s^2\omega_1^2 + 8\omega_4\omega_1\omega_2^2 + 16\omega_3\omega_4 c_s^2\omega_2^2 + 12\omega_3\omega_4 c_s^2\omega_1\omega_2^2 - 8\omega_4\omega_1 v_2^2\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 12\omega_3\omega_1 v_2^2\omega_2^2 - 12\omega_4 c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1^2 v_2^2\omega_2 - 6\omega_4\omega_1^2\omega_2^2 + 6\omega_4\omega_1^2 v_2^2\omega_2^2 + 6\omega_3\omega_1^2 v_2^2\omega_2^2 - 11\omega_3\omega_4 c_s^2\omega_1^2\omega_2^2 - 12\omega_3\omega_4 c_s^2\omega_1^2\omega_2 + 12\omega_3\omega_1\omega_2^2 - 24\omega_3\omega_4\omega_2^2 v_3^2 + 4\omega_4\omega_1^2\omega_2 - 4\omega_4\omega_1^2 v_2^2\omega_2 + 12\omega_3\omega_4\omega_1\omega_2 v_3^2 - 8\omega_3\omega_4\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 - 8\omega_3\omega_4\omega_1^2 - 3\omega_3\omega_4\omega_1^2 v_2^2\omega_2^2 + 8\omega_3\omega_4 v_2^2\omega_2^2 + 18\omega_4 c_s^2\omega_1^2\omega_2^2)\frac{\rho v_2}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = \frac{-c_s^2\rho v_2}{6}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (-6\omega_6\omega_7\omega_5 - \omega_6\omega_7\omega_8\omega_5 - 6\omega_7\omega_8 + 6\omega_7\omega_8\omega_5 + 6\omega_6\omega_5 + 6\omega_6\omega_7 - 6\omega_8\omega_5)\frac{c_s^2\rho v_2}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = (-\omega_7\omega_8 + \omega_7\omega_5 + \omega_7\omega_8\omega_5 - \omega_7^2\omega_5 + \omega_7^2 - \omega_8\omega_5)\frac{c_s^2\rho v_1}{\omega_7^2\omega_8\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = (-2\omega_3 - 6\omega_4 c_s^2 - \omega_3\omega_1 v_1^2 - \omega_4\omega_1 + 2\omega_3 v_1^2 - 3\omega_3 c_s^2\omega_1 + 2\omega_4 + \omega_3\omega_1 - 2\omega_4 v_1^2 + \omega_4\omega_1 v_1^2 + 6\omega_3 c_s^2 + 3\omega_4 c_s^2\omega_1)\frac{\rho v_1}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = (-12 - \omega^2 + 12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = (-12 + 12\omega_7 - \omega_7^2)\frac{c_s^4}{6\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = (-12 + 12\omega_3 - \omega_3^2)\frac{c_s^4}{6\omega_3^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = (-3\omega_1^2\omega_2 v_3^4 - c_s^4\omega_1^2\omega_2^2 - 14c_s^4\omega_2^2 - 2\omega_1\omega_2 v_3^2 + 2\omega_1^2 v_3^4 + 3\omega_1\omega_2^2 v_3^4 + 2c_s^2\omega_1^2\omega_2 + 4\omega_2^2 v_3^2 + 12c_s^2\omega_1^2 v_3^2 + 2c_s^4\omega_1^2 + 6c_s^2\omega_1\omega_2 v_3^2 - 2c_s^4\omega_1^2\omega_2 - 18c_s^2\omega_2^2 v_3^2 + 15c_s^2\omega_1\omega_2^2 v_3^2 - 15c_s^2\omega_1^2\omega_2 v_3^2 - 2c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_2^2 - 2c_s^2\omega_1^2 + 2\omega_1\omega_2 v_3^4 + 3\omega_1^2\omega_2 v_3^2 + 14c_s^4\omega_1\omega_2^2 - 4\omega_2^2 v_3^4 - 2\omega_1^2 v_3^2 - 3\omega_1\omega_2^2 v_3^2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = \frac{-c_s^2\rho v_2}{6}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (-\omega_{16}\omega_{10}\omega_7^2 - 12\omega_{16}\omega_7 + 12\omega_{16}\omega_{10}\omega_7 - 12\omega_{16}\omega_{10} + 12\omega_{10}\omega_7 - 12\omega_{10}\omega_7^2 + 12\omega_7^2)\frac{c_s^2\rho v_2}{6\omega_{16}\omega_{10}\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = (\omega_{19}\omega_7 - 2\omega_{19} + 2\omega_7 - \omega_7^2)\frac{c_s^2\rho v_3}{\omega_{19}\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = (6\omega_1\omega_2 v_3^2 - 5\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 14\omega_2^2 v_3^2 - 2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 10c_s^2\omega_2^2 + 8c_s^2\omega_1^2 - 11\omega_1^2\omega_2 v_3^2 + 2c_s^2\omega_1\omega_2 + 6\omega_2^2 + 8\omega_1^2 v_3^2 + 11\omega_1\omega_2^2 v_3^2)\frac{\rho v_3}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^3\rho}{\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3\rho} = (-1 + 3c_s^2 + v_3^2)\frac{v_2 v_3}{12}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho} = (6\omega_7\omega_{11}v_3^2 + 6\omega_{19}\omega_7 - 12\omega_{19} + 36\omega_{19}c_s^2 - \omega_{19}\omega_7\omega_{11} + \omega_{19}\omega_7\omega_{11}v_3^2 + 12\omega_{19}v_3^2 - 6\omega_7\omega_{11} - 36c_s^2\omega_{11} - 6\omega_{19}\omega_7 v_3^2 + 3\omega_{19}\omega_7 c_s^2\omega_{11} + 12\omega_{11} - 12\omega_{11}v_3^2 - 18\omega_{19}\omega_7 c_s^2 + 18\omega_7 c_s^2\omega_{11})\frac{v_2 v_3}{12\omega_{19}\omega_7\omega_{11}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^3\rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z^3\rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_z^3\rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_z^3\rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

coefficient $C^{(2)}_{\mathrm{D}_z^3 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3 v_2} = (6 + 18c_s^2\omega + \omega^2 + 6\omega v_3^2 - 3c_s^2\omega^2 - 6\omega - \omega^2 v_3^2 - 18c_s^2 - 6v_3^2)\frac{\rho v_3}{6\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_2} = (3\omega_7^2 c_s^2 - 3\omega_{19}\omega_7 - 12\omega_{19}c_s^2 - 3\omega_{19}\omega_7^2 c_s^2 + 3\omega_7^2 v_3^2 + 6\omega_7 + \omega_{19}\omega_7^2 - \omega_{19}\omega_7^2 v_3^2 + 3\omega_{19}\omega_7 v_3^2 - 6\omega_7 v_3^2 + 15\omega_{19}\omega_7 c_s^2 - 3\omega_7^2 - 6\omega_7 c_s^2)\frac{\rho v_3}{6\omega_{19}\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z^3 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^3 v_2} = (6 + \omega_{19}\omega_7 - 3\omega_{19} + 9\omega_{19}c_s^2 - 3\omega_7 + 3\omega_{19}v_3^2 - \omega_{19}\omega_7 v_3^2 + 3\omega_7 v_3^2 - 18c_s^2 - 3\omega_{19}\omega_7 c_s^2 + 9\omega_7 c_s^2 - 6v_3^2)\frac{\rho v_3}{6\omega_{19}\omega_7}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z^3 v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^3 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_z^3 v_2} = (6 - 3\omega_3 - \omega_3\omega_{10}v_3^2 - 3\omega_{10} - 3\omega_3\omega_{10}c_s^2 + 3\omega_3 v_3^2 + 9\omega_{10}c_s^2 - 18c_s^2 + 9\omega_3 c_s^2 + \omega_3\omega_{10} + 3\omega_{10}v_3^2 - 6v_3^2)\frac{\rho v_3}{6\omega_3\omega_{10}}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_z^3 v_2} = (6\omega_3 - 18\omega_4 c_s^2 - 3\omega_4\omega_1 - 6\omega_3\omega_4 c_s^2\omega_1 + 3\omega_4\omega_1 v_3^2 - 6\omega_4 v_3^2 + 9\omega_3 c_s^2\omega_1 + 6\omega_4 - 3\omega_3\omega_1 + 6\omega_3\omega_4 v_3^2 + 2\omega_3\omega_4\omega_1 - 6\omega_3 v_3^2 - 6\omega_3\omega_4 + 3\omega_3\omega_1 v_3^2 + 18\omega_3\omega_4 c_s^2 - 18\omega_3 c_s^2 - 2\omega_3\omega_4\omega_1 v_3^2 + 9\omega_4 c_s^2\omega_1)\frac{\rho v_3}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_z^3 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3 v_3} = (-1 + c_s^2 + 3v_3^2)\frac{\rho v_2}{12}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_3} = (18\omega_7\omega_{11}v_3^2 + 6\omega_{19}\omega_7 - 12\omega_{19} + 12\omega_{19}c_s^2 - \omega_{19}\omega_7\omega_{11} + 3\omega_{19}\omega_7\omega_{11}v_3^2 + 36\omega_{19}v_3^2 - 6\omega_7\omega_{11} - 12c_s^2\omega_{11} - 18\omega_{19}\omega_7 v_3^2 + \omega_{19}\omega_7 c_s^2\omega_{11} + 12\omega_{11} - 36\omega_{11}v_3^2 - 6\omega_{19}\omega_7 c_s^2 + 6\omega_7 c_s^2\omega_{11})\frac{\rho v_2}{12\omega_{19}\omega_7\omega_{11}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z^3 v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^3 v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3 v_3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z^3 v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3 v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_z^3 v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3 v_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

coefficient $C^{(2)}_{\mathrm{D}^4_x \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1^4}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^4_x \rho} = (-6v_1^2 + c_s^2\omega - 12c_s^2\omega v_1^2 + 24c_s^2 v_1^2 + 2c_s^4 - 3\omega v_1^4 + 3\omega v_1^2 - c_s^4\omega - 2c_s^2 + 6v_1^4)\frac{v_2}{24\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho} = (48v_1^2\omega_5\omega_9\omega_{12} - 72v_1^2\omega_5\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^2 - 48c_s^4\omega_5\omega_9\omega_{12}^2 + 432c_s^2v_1^2\omega_5\omega_9^2\omega_{12} - 48c_s^2\omega_5\omega_9^2\omega_{12} - 48v_1^2\omega_9\omega_{12}^2 + 24v_1^2\omega_5\omega_9^2 + 12c_s^2\omega_5^2\omega_{12}^2 - c_s^4\omega_5^2\omega_9^2\omega_{12}^2 + 72c_s^2v_1^2\omega_5^2\omega_9\omega_{12} + 30v_1^2\omega_5^2\omega_9^2\omega_{12} + 36v_1^4\omega_5^2\omega_9\omega_{12}^2 - 24c_s^4\omega_9^2\omega_{12} + 72v_1^4\omega_5\omega_{12}^2 + 12c_s^4\omega_5^2\omega_9^2 + 24v_1^4\omega_5^2\omega_9\omega_{12} - 14c_s^2\omega_5^2\omega_9\omega_{12}^2 + 48v_1^4\omega_9\omega_{12}^2 - 12c_s^4\omega_5^2\omega_9^2\omega_{12} + 150c_s^2v_1^2\omega_5^2\omega_9\omega_{12}^2 + 3v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 24v_1^4\omega_5\omega_9^2 - 12c_s^4\omega_5^2\omega_{12}^2 + 216c_s^2v_1^2\omega_9\omega_{12}^2 - 144c_s^2v_1^2\omega_5\omega_9^2 + 96v_1^4\omega_5\omega_9^2\omega_{12} + 288c_s^2v_1^2\omega_5\omega_{12}^2 + 96v_1^2\omega_5\omega_9\omega_{12}^2 + 24c_s^2\omega_9^2\omega_{12} + 48c_s^2\omega_5\omega_9\omega_{12}^2 + 48v_1^2\omega_9^2\omega_{12} - 48v_1^4\omega_5\omega_9\omega_{12} + 72c_s^2v_1^2\omega_5^2\omega_9^2 - 144c_s^2v_1^2\omega_5^2\omega_{12}^2 - 432c_s^2v_1^2\omega_5\omega_9\omega_{12}^2 + 48c_s^4\omega_5\omega_9^2\omega_{12} - 30v_1^4\omega_5^2\omega_9^2\omega_{12} - 24c_s^4\omega_5\omega_9^2 - 36v_1^4\omega_5^2\omega_{12}^2 + c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 24c_s^4\omega_9\omega_{12}^2 - 12c_s^2v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 24c_s^4\omega_5\omega_{12}^2 + 12v_1^4\omega_5^2\omega_9^2 - 36v_1^2\omega_5^2\omega_9\omega_{12}^2 - 126c_s^2v_1^2\omega_5^2\omega_9^2\omega_{12} - 48v_1^4\omega_9^2\omega_{12} + 14c_s^4\omega_5^2\omega_9\omega_{12}^2 - 24v_1^2\omega_5^2\omega_9\omega_{12} - 3v_1^4\omega_5^2\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9^2\omega_{12} + 24c_s^2\omega_5\omega_9^2 + 36v_1^2\omega_5^2\omega_{12}^2 - 96v_1^2\omega_5\omega_9^2\omega_{12} - 144c_s^2v_1^2\omega_5\omega_9\omega_{12} - 24c_s^2\omega_9\omega_{12}^2 - 216c_s^2v_1^2\omega_9^2\omega_{12} - 96v_1^4\omega_5\omega_9\omega_{12}^2 - 24c_s^2\omega_5\omega_{12}^2 - 12v_1^2\omega_5^2\omega_9^2)\frac{v_2}{24\omega_5^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^4_x \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_x \rho} = (-6v_1^2 - c_s^4\omega_9 + 24c_s^2v_1^2 - 12c_s^2v_1^2\omega_9 + 2c_s^4 - 3v_1^4\omega_9 + c_s^2\omega_9 - 2c_s^2 + 6v_1^4 + 3v_1^2\omega_9)\frac{v_2}{24\omega_9}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^4_x \rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_x \rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_x \rho} = (-6v_1^2 - 12\omega_4c_s^2v_1^2 + \omega_4c_s^2 + 24c_s^2v_1^2 + 2c_s^4 - 3\omega_4v_1^4 + 3\omega_4v_1^2 - 2c_s^2 - \omega_4c_s^4 + 6v_1^4)\frac{v_2}{24\omega_4}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_x \rho} = (12v_1^4\omega_2 + 48c_s^2v_1^2\omega_2 - 36c_s^2\omega_1v_1^2\omega_2 + 2c_s^4\omega_1 + 6\omega_1v_1^4 + 24c_s^2\omega_1v_1^2 + 9\omega_1v_1^2\omega_2 + 4c_s^4\omega_2 - 3c_s^4\omega_1\omega_2 - 12v_1^2\omega_2 - 2c_s^2\omega_1 - 9\omega_1v_1^4\omega_2 - 4c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 6\omega_1v_1^2)\frac{v_2}{72\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}^4_x v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^4}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 3c_s^2\omega + 2\omega - 5\omega v_1^2 + 6c_s^2)\frac{\rho v_1 v_2}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1} =$
$(-72v_1^2\omega_5\omega_9\omega_{12} + 120v_1^2\omega_5\omega_{12}^2 + 24c_s^2\omega_5^2\omega_9^2 + 120c_s^2\omega_5\omega_9^2\omega_{12} + 84v_1^2\omega_9\omega_{12}^2 - 48v_1^2\omega_5\omega_9^2 - 36c_s^2\omega_5^2\omega_{12}^2 - 51v_1^2\omega_5^2\omega_9^2\omega_{12} - 25\omega_5^2\omega_9\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9\omega_{12} - 48\omega_5\omega_{12}^2 - 12\omega_5^2\omega_9\omega_{12} + 39c_s^2\omega_5^2\omega_9\omega_{12}^2 - 36\omega_9\omega_{12}^2 - 5v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 24\omega_5\omega_9^2 - 72\omega_5\omega_9^2\omega_{12} - 168v_1^2\omega_5\omega_9\omega_{12}^2 - 60c_s^2\omega_9^2\omega_{12} - 120c_s^2\omega_5\omega_9\omega_{12}^2 - 84v_1^2\omega_9^2\omega_{12} + 24\omega_5\omega_9\omega_{12} + 24\omega_5^2\omega_{12}^2 - 3c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 21\omega_5^2\omega_9^2\omega_{12} + 61v_1^2\omega_5^2\omega_9\omega_{12}^2 - 12\omega_5^2\omega_9^2 + 36\omega_9^2\omega_{12} + 36v_1^2\omega_5^2\omega_9\omega_{12} - 33c_s^2\omega_5^2\omega_9^2\omega_{12} + 2\omega_5^2\omega_9^2\omega_{12}^2 - 48c_s^2\omega_5\omega_9^2 - 60v_1^2\omega_5^2\omega_{12}^2 + 168v_1^2\omega_5\omega_9^2\omega_{12} + 60c_s^2\omega_9\omega_{12}^2 - 24c_s^2\omega_5\omega_9\omega_{12} + 72\omega_5\omega_9\omega_{12}^2 + 72c_s^2\omega_5\omega_{12}^2 + 24v_1^2\omega_5^2\omega_9^2)\frac{\rho v_1 v_2}{12\omega_5^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^4_x v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 3c_s^2\omega_9 + 6c_s^2 - 5v_1^2\omega_9 + 2\omega_9)\frac{\rho v_1 v_2}{12\omega_9}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^4_x v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 3\omega_4c_s^2 + 2\omega_4 - 5\omega_4v_1^2 + 6c_s^2)\frac{\rho v_1 v_2}{12\omega_4}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_x v_1} = (-15\omega_1v_1^2\omega_2 + 6\omega_1\omega_2 - 4\omega_1 + 20v_1^2\omega_2 + 6c_s^2\omega_1 - 8\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 + 10\omega_1v_1^2)\frac{\rho v_1 v_2}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}^4_x v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^4}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^4_x v_2} = (72v_1^2 - 3\omega^3v_1^2 + 36c_s^2\omega + 216c_s^2\omega v_1^2 + c_s^2\omega^3 + 42\omega^2v_1^2 - 144c_s^2v_1^2 - 14c_s^2\omega^2 + 48c_s^4 + 108\omega v_1^4 - 42\omega^2v_1^4 + 6c_s^2\omega^3v_1^2 - 108\omega v_1^2 - 72c_s^4\omega - 24c_s^2 + 3\omega^3v_1^4 + 30c_s^4\omega^2 - 72v_1^4 - 3c_s^4\omega^3 - 84c_s^2\omega^2v_1^2)\frac{\rho}{24\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_x v_2} = (-24c_s^2v_1^2\omega_5\omega_{12} - 3c_s^4\omega_5^3\omega_{12}^2 - 24v_1^2\omega_5\omega_{12}^2 - 96c_s^2v_1^2\omega_{12}^2 - 12v_1^2\omega_5^3 - 8c_s^2\omega_5^2\omega_{12}^2 + 24v_1^2\omega_5^2 - 24c_s^4\omega_5^2\omega_{12} - 48v_1^4\omega_5\omega_{12} - 6c_s^2\omega_5^3\omega_{12} + 24v_1^4\omega_5\omega_{12}^2 + c_s^2\omega_5^3\omega_{12}^2 + 24c_s^4\omega_5^2\omega_{12}^2 + 24c_s^4\omega_{12}^2 + 24c_s^2\omega_5^2\omega_{12} + 156c_s^2v_1^2\omega_5\omega_{12}^2 + 6c_s^4\omega_5^3\omega_{12} + 48v_1^2\omega_5\omega_{12} - 24v_1^4\omega_5^2 - 18v_1^4\omega_5^3\omega_{12} - 24c_s^2\omega_5\omega_{12} - 72v_1^2\omega_5^2\omega_{12} - 72c_s^2v_1^2\omega_5^2\omega_{12}^2 - 24c_s^2v_1^2\omega_5^2 - 24v_1^4\omega_5^2\omega_{12}^2 + 12v_1^4\omega_5^3 + 12c_s^2v_1^2\omega_5^3 - 48c_s^4\omega_5\omega_{12}^2 - 3v_1^2\omega_5^3\omega_{12}^2 - 12c_s^2v_1^2\omega_5^3\omega_{12} + 24c_s^4\omega_5\omega_{12} + 18v_1^2\omega_5^3\omega_{12} + 6c_s^2v_1^2\omega_5^3\omega_{12}^2 + 72v_1^4\omega_5^2\omega_{12} + 24v_1^2\omega_5^2\omega_{12}^2 + 48c_s^2v_1^2\omega_5^2\omega_{12} + 3v_1^4\omega_5^3\omega_{12}^2 + 12c_s^2\omega_5\omega_{12}^2)\frac{\rho}{24\omega_5^3\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^4_x v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_x v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_2} = (72c_s^2v_1^2\omega_5\omega_{12} - 3c_s^4\omega_5^3\omega_{12}^2 - 36v_1^2\omega_5^3 - 8c_s^2\omega_5^2\omega_{12}^2 + 72v_1^2\omega_5^2 - 24c_s^4\omega_5^2\omega_{12} - 6c_s^2\omega_5^3\omega_{12} + c_s^2\omega_5^3\omega_{12}^2 + 24c_s^4\omega_5^2\omega_{12}^2 + 24c_s^4\omega_{12}^2 + 24c_s^2\omega_5^2\omega_{12} - 36c_s^2v_1^2\omega_5\omega_{12}^2 + 6c_s^4\omega_5^3\omega_{12} - 72v_1^4\omega_5^2 - 30v_1^4\omega_5^3\omega_{12} - 24c_s^2\omega_5\omega_{12} - 72v_1^2\omega_5^2\omega_{12} - 12c_s^2v_1^2\omega_5^2\omega_{12}^2 - 216c_s^2v_1^2\omega_5^2 - 12v_1^4\omega_5^2\omega_{12}^2 + 36v_1^4\omega_5^3 + 108c_s^2v_1^2\omega_5^3 - 48c_s^4\omega_5\omega_{12}^2 - 3v_1^2\omega_5^3\omega_{12}^2 - 72c_s^2v_1^2\omega_5^3\omega_{12} + 24c_s^4\omega_5\omega_{12} + 30v_1^2\omega_5^3\omega_{12} + 6c_s^2v_1^2\omega_5^3\omega_{12}^2 + 72v_1^4\omega_5^2\omega_{12} + 12v_1^2\omega_5^2\omega_{12}^2 + 144c_s^2v_1^2\omega_5^2\omega_{12} + 3v_1^4\omega_5^3\omega_{12}^2 + 12c_s^2\omega_5\omega_{12}^2)\frac{\rho}{24\omega_5^3\omega_{12}^2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^4_x v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_x v_2} = (-24c_s^4\omega_1^2\omega_9 - 12\omega_1^2v_1^4\omega_9^2 + 72\omega_1^2v_1^2 - 36c_s^2\omega_1v_1^2\omega_9^2 - 6c_s^2\omega_1^3\omega_9 - 72c_s^2\omega_1^3v_1^2\omega_9 - 3\omega_1^3v_1^2\omega_9^2 - 3c_s^4\omega_1^3\omega_9^2 - 8c_s^2\omega_1^2\omega_9^2 + 24c_s^2\omega_1^2\omega_9 - 36\omega_1^3v_1^2 + 6c_s^4\omega_1^3\omega_9 + 72c_s^2\omega_1v_1^2\omega_9 + 6c_s^2\omega_1^3v_1^2\omega_9^2 + c_s^2\omega_1^3\omega_9^2 + 30\omega_1^3v_1^2\omega_9 + 24c_s^4\omega_9^2 + 24c_s^4\omega_1^2\omega_9^2 + 72\omega_1^2v_1^4\omega_9 + 36\omega_1^3v_1^4 - 48c_s^4\omega_1\omega_9^2 - 24c_s^2\omega_1\omega_9 + 12\omega_1^2v_1^2\omega_9^2 + 144c_s^2\omega_1^2v_1^2\omega_9 - 216c_s^2\omega_1^2v_1^2 + 3\omega_1^3v_1^4\omega_9^2 - 30\omega_1^3v_1^4\omega_9 + 12c_s^2\omega_1\omega_9^2 - 72\omega_1^2v_1^4 - 72\omega_1^2v_1^2\omega_9 - 12c_s^2\omega_1^2v_1^2\omega_9^2 + 24c_s^4\omega_1\omega_9 + 108c_s^2\omega_1^3v_1^2)\frac{\rho}{24\omega_1^3\omega_9^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_x v_2} = (-12\omega_3^2\omega_4c_s^4\omega_1^2 - 36\omega_3^2\omega_4^2c_s^2\omega_1v_1^2 + 54\omega_3\omega_4c_s^2\omega_1^3v_1^2 + 9\omega_4^2\omega_1^3v_1^4 + 18\omega_3^2\omega_1^2v_1^2 + 12\omega_3^2\omega_4^2c_s^2\omega_1 - 36\omega_3^2\omega_4c_s^2\omega_1^3v_1^2 - 36\omega_3\omega_4\omega_1^2v_1^4 + 12\omega_3\omega_4^2c_s^4\omega_1 + 3\omega_3^2\omega_4^2\omega_1^3v_1^4 + 3\omega_3^2\omega_4c_s^4\omega_1^3 + 24\omega_3^2\omega_4^2c_s^4 + 36\omega_3\omega_4^2c_s^2\omega_1v_1^2 + 15\omega_3^2\omega_4\omega_1^3v_1^2 - 36\omega_3\omega_4^2\omega_1^2v_1^2 + \omega_3^2\omega_4^2c_s^2\omega_1^3 - 108\omega_3\omega_4c_s^2\omega_1^2v_1^2 - 9\omega_3^2\omega_1^3v_1^2 - 18\omega_4^2\omega_1^2v_1^4 - 12\omega_3\omega_4^2c_s^4\omega_1^2 + 15\omega_3\omega_4^2\omega_1^3v_1^2 - 36\omega_3^2\omega_4\omega_1^2v_1^2 - 8\omega_3^2\omega_4^2c_s^2\omega_1^2 + 12\omega_3^2\omega_4c_s^4\omega_1 - 12\omega_3^2\omega_4^2\omega_1^2v_1^4 + 72\omega_3^2\omega_4c_s^2\omega_1^2v_1^2 + 3\omega_3\omega_4^2c_s^4\omega_1^3 + 18\omega_3\omega_4\omega_1^3v_1^4 - 12\omega_3\omega_4^2c_s^2\omega_1 - 36\omega_3\omega_4^2c_s^2\omega_1^3v_1^2 - 3\omega_3^2\omega_4c_s^2\omega_1^3 - 54\omega_3^2c_s^2\omega_1^2v_1^2 - 54\omega_4^2c_s^2\omega_1^2v_1^2 + 18\omega_4^2\omega_1^2v_1^2 + 9\omega_3^2\omega_1^3v_1^4 + 36\omega_3^2\omega_4c_s^2\omega_1v_1^2 + 12\omega_3^2\omega_4^2\omega_1^2v_1^2 + 12\omega_3^2\omega_4c_s^2\omega_1^2 - 18\omega_3\omega_4\omega_1^3v_1^2 - 15\omega_3\omega_4^2\omega_1^3v_1^4 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 - 48\omega_3^2\omega_4^2c_s^4\omega_1 + 36\omega_3^2\omega_4\omega_1^2v_1^4 + 27\omega_4^2c_s^2\omega_1^3v_1^2 - 18\omega_3^2\omega_1^2v_1^4 - 9\omega_4^2\omega_1^3v_1^2 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_1^2 - 12\omega_3^2\omega_4c_s^2\omega_1 + 27\omega_3^2c_s^2\omega_1^3v_1^2 - 3\omega_3\omega_4^2c_s^2\omega_1^3 - 12\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2 - 3\omega_3^2\omega_4^2c_s^4\omega_1^3 - 15\omega_3^2\omega_4\omega_1^3v_1^4 + 36\omega_3\omega_4^2\omega_1^2v_1^4 + 12\omega_3\omega_4^2c_s^2\omega_1^2 + 36\omega_3\omega_4\omega_1^2v_1^2 - 3\omega_3^2\omega_4^2\omega_1^3v_1^2)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$

coefficient $C^{(2)}_{\mathrm{D}^3_x\mathrm{D}_y\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^3\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = (24 - 24v_1^2 + \omega^3v_1^2 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 3c_s^2\omega^3 - 14\omega^2v_1^2 - 42c_s^2\omega^2 - 36\omega + 36\omega v_1^2 - 72c_s^2)\frac{c_s^2v_1}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} =$
$(6\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2 + 36\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12}^2 - 24\omega_{10}v_1^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 96\omega_{10}c_s^4\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_{10}c_s^4\omega_5^2\omega_9^2\omega_{12}^2 - 48\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 72\omega_{10}c_s^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 60\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12}^2 - 12c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 12\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_9\omega_{12}^2 - 36\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2 - 36\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 6v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 6\omega_{10}c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 6\omega_{10}\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12} - 15\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 18\omega_{10}c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 + 156\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 36c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 6\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 9\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 36\omega_{10}c_s^2\omega_5^3v_2^2\omega_9^2\omega_{12}^2 + 6\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 5\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}v_1^2\omega_5^2v_2^2\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^2\omega_5^3v_2^2\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 6\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 9\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}v_1^2\omega_5^2v_2^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}c_s^2v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 24\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 18c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6\omega_{10}\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 + 6\omega_{10}c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 18\omega_{10}c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 45\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36\omega_{10}c_s^2\omega_5^3v_2^2\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{10}c_s^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 + 48\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2 - 12\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 42\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 72c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24\omega_{10}\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36c_s^2\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12}^2 + 18\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12}^2 - 108\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12}^2 + 36\omega_{10}c_s^2\omega_5^2v_2^2\omega_{15}\omega_9^2\omega_{12} + 36\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}\omega_5^2v_2^2\omega_9^2\omega_{12}^2 - 72\omega_{10}c_s^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}\omega_5^2v_2^2\omega_{15}\omega_9^2\omega_{12}^2 + 24\omega_{10}v_1^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_9^2\omega_{12}^2 - 6c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_{10}v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12} + 3\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12}^2 - 3\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36\omega_{10}c_s^4\omega_5^3\omega_9^2\omega_{12}^2 + 15\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_9\omega_{12}^2 + 6\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 18\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 6c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 15\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36\omega_{10}c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 12v_1^2\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12}^2 - 18c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2 + 36\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12}^2 + 6\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 18\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}v_1^2\omega_5^3v_2^2\omega_9^2\omega_{12}^2 + 36\omega_{10}c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 3\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 36c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12}^2 - 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 27\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36\omega_{10}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}v_1^2\omega_5^2v_2^2\omega_9^2\omega_{12}^2 - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + \omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_5^3v_2^2\omega_9^2\omega_{12}^2 + 12\omega_{10}c_s^2v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 15\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 18\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12}^2 - 6v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 18\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 24\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}\omega_5^3v_2^2\omega_9^2\omega_{12}^2 - 24\omega_{10}\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 + 72c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 18c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 144\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6\omega_{10}v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - \omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10}c_s^2\omega_5^2v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 24v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}\omega_5^2v_2^2\omega_{15}\omega_9^2\omega_{12} + 54\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2)\frac{v_1}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = (\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}v_1^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_{21}\omega_{15}\omega_{12}^2 + 12\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9 +$

$12\omega_{10}\omega_5^2\omega_9\omega_{12}^2 - 18c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 18\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}\omega_{12}^2 - 18\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 +$
$12\omega_{10}\omega_5\omega_{21}\omega_{12}^2 - 12\omega_{10}v_1^2\omega_5\omega_{15}\omega_9\omega_{12}^2 - 12\omega_5^2\omega_9\omega_{12}^2 + 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 12\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}\omega_9 +$
$12\omega_{10}v_1^2\omega_5\omega_9\omega_{12}^2 + 18\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 36\omega_{10}c_s^2\omega_{21}\omega_{15}\omega_{12}^2 - 12\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}v_1^2\omega_5\omega_{15}\omega_9\omega_{12} + 36c_s^2\omega_5^2\omega_9\omega_{12}^2 -$
$15\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 18\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{12}^2 + 12\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12}^2 - 12v_1^2\omega_5^2\omega_{21}\omega_{12}^2 - 3\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$12\omega_{10}v_1^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36\omega_{10}c_s^2\omega_5\omega_{21}\omega_{12}^2 - 18\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12}^2 - 36\omega_{10}c_s^2\omega_5^2\omega_9\omega_{12}^2 - 6\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9 - 36\omega_{10}c_s^2\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$6\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_{10}v_1^2\omega_5^2\omega_9\omega_{12}^2 + 54\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 36c_s^2\omega_5^2\omega_{21}\omega_{12}^2 - 12\omega_{10}v_1^2\omega_5\omega_{21}\omega_{12}^2 + 12\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$6\omega_{10}v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 9\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9 + 36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{12}^2 + 36\omega_{10}c_s^2\omega_5\omega_{15}\omega_9\omega_{12} - \omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$36\omega_{10}c_s^2\omega_5\omega_9\omega_{12}^2 - 12\omega_{10}v_1^2\omega_{21}\omega_{15}\omega_{12}^2 - 5\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 12v_1^2\omega_5^2\omega_9\omega_{12}^2 - 6v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12}^2 + 54\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12}^2 + 6\omega_5^2\omega_{15}\omega_9\omega_{12}^2 +$
$3\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 6\omega_{10}v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 6\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 6\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 36\omega_{10}c_s^2\omega_5\omega_{15}\omega_9\omega_{12}^2 +$
$3\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_5^2\omega_{21}\omega_{12}^2 - 36\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 5\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 12\omega_{10}\omega_5\omega_9\omega_{12}^2 - 18\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$36\omega_{10}c_s^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}\omega_5^2\omega_{21}\omega_{12}^2 - 6\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12}^2)\frac{c_s^2 v_1}{12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = (12\omega_1 v_1^2\omega_9 + 54\omega_4 c_s^2\omega_1\omega_9 + \omega_4\omega_1^2 v_1^2\omega_9^2 - 12\omega_1\omega_9 - 12\omega_4\omega_9^2 + 3c_s^2\omega_1^2\omega_9^2 + 12\omega_4\omega_1\omega_9^2 - 6\omega_4\omega_1^2 - 18c_s^2\omega_1^2\omega_9 + 12\omega_4\omega_1 -$
$18\omega_4\omega_1\omega_9 + 6\omega_4\omega_1^2 v_1^2 + 12\omega_4\omega_9 - 36\omega_4 c_s^2\omega_1\omega_9^2 + 6\omega_1 v_1^2\omega_9^2 - 3\omega_4\omega_1^2 v_1^2\omega_9 - 6\omega_1\omega_9^2 - 12\omega_4 v_1^2\omega_9 + 3\omega_4 c_s^2\omega_1^2\omega_9^2 + 12\omega_9^2 - \omega_1^2\omega_9^2 + 36\omega_4 c_s^2\omega_9^2 +$
$18\omega_4 c_s^2\omega_1^2 + 3\omega_4\omega_1^2\omega_9 + 36c_s^2\omega_1\omega_9 + 18\omega_4\omega_1 v_1^2\omega_9 + \omega_1^2 v_1^2\omega_9^2 - 12v_1^2\omega_9^2 - 12\omega_4\omega_1 v_1^2 - \omega_4\omega_1^2\omega_9^2 - 12\omega_4\omega_1 v_1^2\omega_9^2 - 36c_s^2\omega_9^2 + 18c_s^2\omega_1\omega_9^2 -$
$6\omega_1^2 v_1^2\omega_9 - 36\omega_4 c_s^2\omega_1 - 9\omega_4 c_s^2\omega_1^2\omega_9 + 12\omega_4 v_1^2\omega_9^2 + 6\omega_1^2\omega_9 - 36\omega_4 c_s^2\omega_9)\frac{c_s^2 v_1}{12\omega_4\omega_1^2\omega_9^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = (-108\omega_4^2 c_s^4\omega_1^2\omega_2^3 - 78\omega_3^2\omega_4^2\omega_1^2 v_1^4\omega_2^3 - 18\omega_3^2 c_s^2\omega_1^3\omega_2^3 - 412\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^2 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2 - 72\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^3 +$
$144\omega_3^2\omega_4^2 c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2 c_s^4\omega_1^3\omega_2^3 + 52\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^2 + 36\omega_3^2\omega_4 c_s^2\omega_1^2 v_1^2\omega_2^3 - 108\omega_3^2 c_s^4\omega_1^2\omega_2^3 - 784\omega_3^2\omega_4^2 c_s^2 v_1^2\omega_2^3 - 18\omega_4^2 c_s^2\omega_1^3\omega_2^3 + 208\omega_3^2\omega_4^2 c_s^2\omega_2^3 +$
$16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2\omega_4^2 c_s^4\omega_1^3\omega_2^3 - 40\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^2 - 460\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^3 + 72\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2 - 96\omega_3^2\omega_4^2\omega_1^2 v_1^4\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3 v_1^4 + 208\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2 +$
$184\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^3 - 92\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2^2 - 108\omega_3\omega_4^2 c_s^4\omega_1^3\omega_2^2 - 104\omega_3^2\omega_4^2 c_s^2\omega_1^3 + 72\omega_3\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^3 + 36\omega_4^2 c_s^2\omega_1^2\omega_2^3 + 32\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^2 - 118\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2^2 +$
$216\omega_3\omega_4^2 c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2 c_s^4\omega_1^3\omega_2^3 + 18\omega_3^2 c_s^2\omega_1^3 v_1^2\omega_2^3 + 48\omega_3\omega_4^2 c_s^4\omega_1^3\omega_2 + 152\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2 c_s^2\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2^2 +$
$9\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^3 v_2^4\omega_2^2 + 120\omega_3^2\omega_4^2\omega_1^2 v_1^4\omega_2 + 54\omega_4^2 c_s^4\omega_1^3\omega_2^3 + 160\omega_3^2\omega_4^2 v_1^2\omega_2^3 - 88\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2 + 18\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^3 + 120\omega_3\omega_4^2 c_s^4\omega_1^2\omega_2^2 -$
$6\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2^3 - 256\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2^3 + 40\omega_3\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^2 + 18\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_2^2\omega_2^2 + 36\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 448\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2 -$
$342\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 276\omega_3^2\omega_4^2 c_s^4\omega_1^3\omega_2 - 16\omega_3^2\omega_4^2\omega_2^3 - 288\omega_3^2\omega_4^2 c_s^4\omega_2^3 + 104\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 - 56\omega_3\omega_4^2 c_s^2\omega_1 v_1^2\omega_2^3 +$
$6\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 78\omega_3^2\omega_4^2\omega_1^3 v_1^4\omega_2^2 + 588\omega_3^2\omega_4^2 c_s^4\omega_1\omega_2^3 - 9\omega_3^2\omega_4 c_s^2\omega_1^3 v_1^2\omega_2^3 - 36\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^3 + 92\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^3 + 16\omega_3\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2 -$
$168\omega_3\omega_4^2 c_s^4\omega_1\omega_2^3 - 144\omega_3^2\omega_4^2 c_s^4\omega_1\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 27\omega_3^2\omega_4 c_s^4\omega_1^3\omega_2^3 + 320\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_1^2 + 394\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^2 - 56\omega_3^2\omega_4^2 c_s^2\omega_1 v_1^2\omega_2^2 +$
$228\omega_3^2\omega_4^2\omega_1 v_1^4\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^2 v_2^4\omega_2^3 - 712\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2 - 36\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^3 - 36\omega_3\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^2 - 368\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^3 + 108\omega_3\omega_4 c_s^4\omega_1^2\omega_2^3 +$
$8\omega_3^2\omega_4^2\omega_1^3 + 144\omega_3^2\omega_4^2 c_s^4\omega_1^3 - 24\omega_3^2\omega_4^2\omega_1 v_1^4\omega_2^2 + 56\omega_3\omega_4^2 c_s^2\omega_1\omega_2^3 + 1232\omega_3^2\omega_4^2 c_s^2\omega_1 v_1^2\omega_2^3 - 18\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_2^2\omega_2^3 - 132\omega_3^2\omega_4^2\omega_1^3 v_1^4\omega_2 - 9\omega_3\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^3 -$
$6\omega_3^2\omega_4^2\omega_1^3 v_2^2\omega_2^2 + 56\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^2 - 36\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_2^3 - 136\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2 - 56\omega_3^2\omega_4^2\omega_1^3 v_1^2 + 9\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^3 - 144\omega_3^2\omega_4^2 v_1^4\omega_2^3)\frac{v_1}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}^3_x\mathrm{D}_y v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = (-12 + 36v_1^2 - 6\omega^2 - c_s^2\omega^3 + 18\omega^2 v_1^2 + 2c_s^2\omega^2 + 18\omega - 54\omega v_1^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = (18\omega_{10} v_1^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{10} c_s^2\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_{12}^2 - 72\omega_{10} v_1^2\omega_5 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10} c_s^4\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^2 v_1^2\omega_5^3\omega_9^2\omega_{12}^2 -$
$36c_s^2 v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 15\omega_{10} c_s^2 v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 5\omega_{10} c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10} c_s^2\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10} c_s^4\omega_5^2\omega_9^2\omega_{12}^2 -$
$48\omega_{10}\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24\omega_{10} c_s^2\omega_5 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 5\omega_{10} c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18\omega_{10} v_1^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_{12}^2 - 12c_s^2\omega_5^3\omega_9^2\omega_{12}^2 +$
$12\omega_{10}\omega_5^2 v_2^2\omega_{21}\omega_9\omega_{12}^2 - 12\omega_{10} c_s^2\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{10} c_s^4\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 18v_1^2\omega_5^3 v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 18\omega_{10} c_s^2 v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 6\omega_{10}\omega_5^3 v_2^2\omega_{15}\omega_9^2\omega_{12} -$
$5\omega_{10} c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6\omega_{10} c_s^2\omega_5^3 v_2^2\omega_{15}\omega_9^2\omega_{12}^2 + 18\omega_{10} c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10} c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 18\omega_{10} v_1^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$9\omega_{10}\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10} c_s^2\omega_5^2 v_2^2\omega_9^2\omega_{12}^2 + 6\omega_5^3 v_2^2\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10} c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + \omega_{10} c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 15\omega_{10} c_s^2 v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$36\omega_{10} v_1^2\omega_5^2 v_2^2\omega_{15}\omega_9^2\omega_{12}^2 + 60\omega_{10} c_s^2 v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^3 v_2^2\omega_9^2\omega_{12}^2 - 36\omega_{10} c_s^2 v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 6\omega_{10}\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$27\omega_{10} v_1^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 18\omega_{10} c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36\omega_{10} v_1^2\omega_5^2 v_2^2\omega_{15}\omega_9^2\omega_{12} + 36\omega_{10} c_s^2 v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 24\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$60\omega_{10} c_s^2 v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10} c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 36v_1^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6c_s^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6\omega_{10}\omega_5^3 v_2^2\omega_{15}\omega_9^2\omega_{12}^2 +$
$18\omega_{10} c_s^2 v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_{10} c_s^2\omega_5^3 v_2^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10} c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10} c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 15\omega_{10} c_s^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} -$
$12\omega_{10} c_s^2\omega_5^3 v_2^2\omega_9^2\omega_{12}^2 - 36\omega_{10} c_s^2 v_1^2\omega_5^3\omega_9^2\omega_{12}^2 + 144\omega_{10} v_1^2\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10} c_s^2\omega_5^2 v_2^2\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10}\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9^2 -$
$12\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 18\omega_{10} c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 72v_1^2\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 24c_s^2\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24\omega_{10}\omega_5 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} -$
$12\omega_{10} c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^2\omega_5^3 v_2^2\omega_{21}\omega_9\omega_{12}^2 - 102\omega_{10} c_s^2 v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10}\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_{12}^2 - 36\omega_{10} c_s^2\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$36\omega_{10} v_1^2\omega_5^3 v_2^2\omega_{21}\omega_9\omega_{12}^2 + 12\omega_{10} c_s^2\omega_5^2 v_2^2\omega_{15}\omega_9^2\omega_{12} + 36\omega_{10}\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36\omega_{10} v_1^2\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}\omega_5^2 v_2^2\omega_9^2\omega_{12}^2 -$
$24\omega_{10} c_s^2\omega_5 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}\omega_5^2 v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 48\omega_{10} c_s^2 v_1^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 72\omega_{10} v_1^2\omega_5 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 12\omega_{10} c_s^2\omega_5^2\omega_9^2\omega_{12}^2 -$
$18c_s^2 v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 18\omega_{10} v_1^2\omega_5^3 v_2^2\omega_{15}\omega_9^2\omega_{12} - 6\omega_{10} c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_5^3 v_2^2\omega_{21}\omega_9\omega_{12}^2 + 30\omega_{10} c_s^2 v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10} c_s^4\omega_5^3\omega_9^2\omega_{12}^2 +$
$15\omega_{10}\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36\omega_{10} v_1^2\omega_5^2 v_2^2\omega_{21}\omega_9\omega_{12}^2 + 6\omega_{10}\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_{12}^2 + 12\omega_{10} c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 36\omega_{10} c_s^2 v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 -$
$6\omega_{10} c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 18c_s^2 v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 6\omega_{10} c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_{10} c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 36v_1^2\omega_5^3 v_2^2\omega_{21}\omega_9\omega_{12}^2 -$
$6c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_{10}\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{10} c_s^2\omega_5^3 v_2^2\omega_{21}\omega_9\omega_{12}^2 - 12\omega_{10} c_s^2 v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 6\omega_{10} c_s^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 6\omega_{10} c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 -$
$36\omega_{10} v_1^2\omega_5^3 v_2^2\omega_9^2\omega_{12}^2 + 12\omega_{10} c_s^4\omega_5^2\omega_{15}\omega_9^2\omega_{12} - \omega_{10} c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36\omega_{10} c_s^2 v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12c_s^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6\omega_{10} c_s^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9^2 -$
$12\omega_{10}\omega_5^3 v_2^2\omega_{21}\omega_9\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36\omega_{10} v_1^2\omega_5^2 v_2^2\omega_{21}\omega_{15}\omega_{12}^2 - 6\omega_{10} c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 9\omega_{10} c_s^2\omega_5^3 v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$12\omega_{10} c_s^4\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36\omega_{10} v_1^2\omega_5^2 v_2^2\omega_9^2\omega_{12}^2 - 18\omega_{10} c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_5^3 v_2^2\omega_9^2\omega_{12}^2 + 36\omega_{10} c_s^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_{10} c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} -$

$45\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 6\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12}^2 - 18v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2 +$
$36v_1^2\omega_5^3v_2^2\omega_9^2\omega_{12}^2 - 36\omega_{10}c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6\omega_{10}c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 24\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_{10}\omega_5^3v_2^2\omega_9^2\omega_{12}^2 - 24\omega_{10}\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6c_s^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 + 24c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 48\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} +$
$54\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 18\omega_{10}v_1^2\omega_5^3v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^2v_2^2\omega_{15}\omega_9^2\omega_{12}^2 - 108\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$72v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}\omega_5^2v_2^2\omega_{15}\omega_9^2\omega_{12} + 18\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2)\frac{\rho}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (12\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}c_s^2\omega_5^2\omega_9\omega_{12} - 12\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9 - 36\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{12} + 12\omega_5^3\omega_{21}\omega_{12} + 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} -$
$12\omega_{10}\omega_5^2\omega_{15}\omega_9 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 18\omega_{10}v_1^2\omega_5^3\omega_{15}\omega_9 - 18\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 6c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_{10}\omega_5^3\omega_{21}\omega_{12} +$
$36\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}\omega_9 - 36\omega_{10}v_1^2\omega_5^3\omega_9\omega_{12} - 5\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12c_s^2\omega_5^3\omega_{21}\omega_{12} - 12\omega_{10}\omega_5^2\omega_9\omega_{12} + 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9 -$
$36\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{12} - 3\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}c_s^2\omega_5^2\omega_{15}\omega_9 + 36v_1^2\omega_5^3\omega_9\omega_{12} -$
$\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_{10}v_1^2\omega_5^2\omega_{15}\omega_9 + 18\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9 - 12\omega_{10}c_s^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^2\omega_5^3\omega_9\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{12} +$
$12\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} + 18\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 36\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{12} - 18\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}\omega_5^3\omega_{15}\omega_9 - 36v_1^2\omega_5^3\omega_{21}\omega_{12} -$
$5\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9 - 15\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 12\omega_{10}c_s^2\omega_5^3\omega_9\omega_{12} - 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} +$
$18\omega_{10}v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 54\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9 - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 18v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 6\omega_5^3\omega_{15}\omega_9\omega_{12} -$
$36\omega_{10}v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{12} - 54\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 18v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + \omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 6\omega_{10}\omega_5^3\omega_{15}\omega_9\omega_{12} +$
$12\omega_{10}\omega_5^3\omega_9\omega_{12} - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9 + 5\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_5^3\omega_9\omega_{12} + 36\omega_{10}v_1^2\omega_5^2\omega_9\omega_{12})\frac{c_s^2\rho}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (36\omega_1^2v_1^2 + 18\omega_4\omega_1^3v_1^2 - 36\omega_1v_1^2\omega_9 + 18\omega_4c_s^2\omega_1\omega_9 - 6\omega_4\omega_1^3 + c_s^2\omega_1^3\omega_9 + 12\omega_1\omega_9 + 18\omega_4\omega_1^2 + 6c_s^2\omega_1^2\omega_9 - 12\omega_4\omega_1 - 54\omega_4\omega_1^2v_1^2 -$
$18\omega_1^3v_1^2 - 3\omega_4\omega_1^2v_1^2\omega_9 + 3\omega_1^3v_1^2\omega_9 - 12\omega_1^2 - 18\omega_4c_s^2\omega_1^2 + \omega_4\omega_1^2\omega_9 - \omega_1^3\omega_9 - 12c_s^2\omega_1\omega_9 - \omega_4c_s^2\omega_1^3\omega_9 + 6\omega_4c_s^2\omega_1^3 + 36\omega_4\omega_1v_1^2 + 6\omega_1^3 + 12c_s^2\omega_1^2 +$
$18\omega_1^2v_1^2\omega_9 - 6c_s^2\omega_1^3 + 12\omega_4c_s^2\omega_1 - 5\omega_4c_s^2\omega_1^2\omega_9 - 6\omega_1^2\omega_9 - 12\omega_4c_s^2\omega_9)\frac{c_s^2\rho}{12\omega_4\omega_1^3\omega_9}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (-4\omega_3\omega_4\omega_1^2\omega_2^2 + 108\omega_3c_s^2\omega_1v_1^2\omega_2^3 + 144\omega_3\omega_4v_1^2\omega_2^3 + 81\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 24\omega_4c_s^2\omega_1^3v_1^2\omega_2 + 144\omega_3\omega_4c_s^2\omega_1^3v_1^2 - 20\omega_3\omega_4c_s^2\omega_1^3 -$
$28\omega_3\omega_4c_s^4\omega_1\omega_2^2 + 3\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 84\omega_3\omega_4\omega_1^2v_1^2\omega_2^2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 + 24\omega_4c_s^2\omega_1v_1^2\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 - 36\omega_3c_s^2\omega_1\omega_2^3 + 120\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2 +$
$94\omega_3\omega_4c_s^4\omega_1\omega_2^3 + 138\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 - 8\omega_4c_s^2\omega_1\omega_2^3 - 240\omega_3\omega_4\omega_1^3v_1^4\omega_2 - 24\omega_3\omega_4\omega_1v_1^4\omega_2^2 + 27\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 - 96\omega_3\omega_4\omega_1^2v_1^2\omega_2 + 32\omega_3\omega_4c_s^2\omega_1\omega_2^2 -$
$\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 - 90\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 408\omega_3\omega_4\omega_1v_1^4\omega_2^3 - \omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 36\omega_3c_s^4\omega_1\omega_2^3 - 153\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 54\omega_3\omega_4c_s^2\omega_1\omega_2^3 +$
$40\omega_3\omega_4c_s^2\omega_2^3 + 8\omega_3\omega_4\omega_1^2\omega_2 - 54\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 + 27\omega_3c_s^2\omega_1^3v_1^2\omega_2^2 + 96\omega_3\omega_4\omega_1^3v_1^4 + 8\omega_4c_s^4\omega_1\omega_2^3 - 168\omega_3\omega_4\omega_1^2v_1^4\omega_2^2 - 9\omega_4c_s^2\omega_1^3\omega_2^2 - 3\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 +$
$8\omega_3\omega_4c_s^4\omega_1^2\omega_2 - 36\omega_3c_s^4\omega_1^2\omega_2^3 - 60\omega_3\omega_4c_s^2\omega_1v_1^2\omega_2^2 - 9\omega_3c_s^2\omega_1^3\omega_2^3 + 42\omega_3\omega_4c_s^2\omega_1^3\omega_2 + 24\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - 81\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 288\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2 -$
$18\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_4c_s^4\omega_1^3\omega_2 + 17\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 - 264\omega_3\omega_4v_1^4\omega_2^3 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 8\omega_3\omega_4\omega_2^3 - 60\omega_3\omega_4\omega_1^3v_1^2 - 138\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 20\omega_4c_s^4\omega_1^2\omega_2^2 -$
$312\omega_3\omega_4c_s^2v_1^2\omega_2^3 + 16\omega_3\omega_4c_s^4\omega_1^3 - 6\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 3\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 432\omega_3\omega_4c_s^2\omega_1v_1^2\omega_2^3 - 222\omega_3\omega_4\omega_1v_1^2\omega_2^3 + 9\omega_4c_s^4\omega_1^3\omega_2^3 + \omega_3\omega_4\omega_1^2v_2^2\omega_2^3 -$
$16\omega_3\omega_4c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1^3 + 60\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 - 108\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 - 29\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 -$
$68\omega_3\omega_4c_s^4\omega_2^3 - 32\omega_3\omega_4c_s^4\omega_1^3\omega_2 - 8\omega_4c_s^2\omega_1^3\omega_2 + 18\omega_4c_s^2\omega_1^2\omega_2^3 - 24\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2^2 + 138\omega_3\omega_4\omega_1^3v_1^2\omega_2 - 54\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 +$
$153\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 + 12\omega_3\omega_4\omega_1v_1^2\omega_2^2 - 18\omega_4c_s^4\omega_1^3\omega_2^2 + 192\omega_3\omega_4\omega_1^2v_1^4\omega_2 - 20\omega_4c_s^2\omega_1^2\omega_2^2 + \omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 10\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (2 - 2v_1^2 + 3c_s^2\omega - \omega + \omega v_1^2 - 6c_s^2)\frac{\rho v_1 v_2}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (156\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 18\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$
$12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 18\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 24c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 24\omega_{10}^2v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 +$
$24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 + 60\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 - 24\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$
$24\omega_{10}v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + \omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 66\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 - 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 24c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 48\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 + 90\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 24\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 +$
$18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 24\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} -$
$6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 - 18\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 36\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} -$
$24\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$66\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$66\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 24\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} +$
$36\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 -$
$36\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 96\omega_{10}^2c_s^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 24\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 24\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 4\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$24\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 72\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 48\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 + 72\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$36\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 - 42\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 24\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}v_1^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 -$

$84\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} + 24\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 84\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 132\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2)\frac{\rho v_1 v_2}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-\omega_9\omega_{12} + v_1^2\omega_9\omega_{12} + 3c_s^2\omega_9\omega_{12} - 9c_s^2\omega_9 + 3c_s^2\omega_{12} + v_1^2\omega_{12} - 3v_1^2\omega_9 + 3\omega_9 - \omega_{12})\frac{\rho v_1 v_2}{12\omega_9\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-9\omega_4c_s^2 - \omega_4\omega_9 + 3\omega_4 + \omega_4v_1^2\omega_9 + 3c_s^2\omega_9 - 3\omega_4v_1^2 + v_1^2\omega_9 - \omega_9 + 3\omega_4c_s^2\omega_9)\frac{\rho v_1 v_2}{12\omega_4\omega_9}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (2\omega_3\omega_4\omega_1v_1^2 + 6\omega_3\omega_4c_s^2\omega_2 + 18\omega_3\omega_4c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4c_s^2\omega_1 + 4\omega_3\omega_4v_1^2\omega_2 - 27\omega_4c_s^2\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 -$
$6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 18\omega_3\omega_4v_2^2\omega_2 + 6\omega_3\omega_4\omega_1v_1^2\omega_2 + 9\omega_3\omega_1\omega_2 - 9\omega_3\omega_1v_1^2\omega_2 - 9\omega_4\omega_1v_1^2\omega_2 + 2\omega_3\omega_4\omega_2 + 18\omega_3\omega_4\omega_1v_2^2)\frac{\rho v_1 v_2}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (24 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 5c_s^2\omega^3 + 36\omega v_2^2 - 46c_s^2\omega^2 - 36\omega - 14\omega^2v_2^2 - 72c_s^2 - 24v_2^2 + \omega^3v_2^2)\frac{c_s^2v_2}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (12\omega_{10}^3c_s^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{12} - 88\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 72\omega_{10}^2c_s^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} +$
$36\omega_{10}^3c_s^4\omega_5^2\omega_{15}\omega_{12} - 6\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 + 36\omega_{10}^3v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^2v_2^2\omega_{15}^2\omega_{12} -$
$36\omega_{10}^3c_s^2v_1^2\omega_5^2\omega_{15}^2\omega_{12} - 18\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15}\omega_{12} - 36\omega_{10}^3v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_{12} +$
$108\omega_{10}^3c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 72\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2 - 24\omega_{10}^3v_1^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_{12} +$
$12\omega_{10}^3v_1^2\omega_5^3v_2^2\omega_{21}\omega_{12} - 6\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{15}^2 - 6\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2 - 12v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 84\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} -$
$6\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} - 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 18\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_{12} - 36\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2 -$
$12\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 54\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 42\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 18\omega_{10}^3c_s^2v_1^2\omega_5^3\omega_{15}^2 + 12\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} +$
$6\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^3c_s^2v_1^2\omega_5^3\omega_{15}\omega_{12} + 12v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2 + 24\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^3c_s^2v_1^2\omega_5^2\omega_{21}\omega_{12} +$
$12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 - 36\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{12} + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^2v_2^2\omega_{21}\omega_{12} + 18\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{12} + 12\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2\omega_{12} + 12\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} +$
$36\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_{12} + 36\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_{12} + 18\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} + 36\omega_{10}^3c_s^2v_1^2\omega_5^2\omega_{15}^2 + 12\omega_{10}^3v_1^2\omega_5^2v_2^2\omega_{15}^2 +$
$5\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}^3c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$
$36\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}\omega_{12} + 6\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2 - 12\omega_{10}^3v_1^2\omega_5^3\omega_{21}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} +$
$12\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{15}\omega_{12} + 6\omega_{10}^3v_1^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} - \omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} +$
$6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2 - 72\omega_{10}^3c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2 - 18\omega_{10}^2c_s^4\omega_5^3\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12} - 2\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} -$
$18\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{12} - 12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 24\omega_{10}^3v_1^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 30\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2\omega_{12} +$
$12\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15}^2 - 12\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{12} - 72\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^3v_2^2\omega_{15}\omega_{12} - 24\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} +$
$180\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} + 36\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2 + 12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 +$
$18\omega_{10}^3c_s^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} + 24\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2 + 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$
$12\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^2v_1^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{21}\omega_{12} + 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 96\omega_{10}^3c_s^4\omega_{21}\omega_{15}^2\omega_{12} +$
$150\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 - 36\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^3c_s^4\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{21}\omega_{12} +$
$12\omega_{10}^3v_1^2\omega_5^3\omega_{15}\omega_{12} - 18\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2 - 6\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} + 2\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2 -$
$12c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 24\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^2\omega_{21}\omega_{12} - 6\omega_{10}^3v_1^2\omega_5^3v_2^2\omega_{15}^2 + 18\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} -$
$36\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 48\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_{12} + 12\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2 + 36c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} -$
$6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 24\omega_{10}^2v_1\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 42\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_{12} + \omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2\omega_{12} -$
$12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15}^2\omega_{12} + 36\omega_{10}^3c_s^2v_1^2\omega_5^2\omega_{15}\omega_{12} + 36\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^2v_2^2\omega_{15}\omega_{12} - 18\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$
$18\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} - 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 + 36\omega_{10}^3c_s^2v_1^2\omega_5^3\omega_{21}\omega_{12} + 36c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12})\frac{v_2}{12\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} =$
$(-12\omega_{10}^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3\omega_5\omega_{15}\omega_{12} + 12\omega_{10}^3\omega_5v_2^2\omega_{15}\omega_{12} - 12\omega_{10}^3\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_{12} +$
$5\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3\omega_5\omega_{15}^2 + 12\omega_{10}^3\omega_5v_2^2\omega_{15}^2 - 6\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$
$12\omega_{10}^3\omega_5^2v_2^2\omega_{21}\omega_{12} - 12\omega_{10}^2\omega_5v_2^2\omega_{21}\omega_{15}^2 + \omega_{10}^3\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}^3c_s^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{12} +$
$54\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}^3c_s^2\omega_5\omega_{15}^2 + 54\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^2\omega_5^2v_2^2\omega_{15}\omega_{12} + 36\omega_{10}^3c_s^2\omega_5\omega_{15}\omega_{12} + 2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$
$12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 6\omega_{10}^2\omega_5^2\omega_{15}^2\omega_{12} + 36\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_{12} + 18\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_{12} + 18\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} + 54\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} +$
$6\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^3\omega_5^2v_2^2\omega_{15}^2\omega_{12} - 36\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2 - 12\omega_{10}^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2 -$
$36\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12} - 40\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 2\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3\omega_5^2v_2^2\omega_{15}\omega_{12} - \omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} +$
$12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2\omega_5^2\omega_{15}\omega_{12} - 18\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2 -$
$36\omega_{10}^3c_s^2\omega_5\omega_{21}^2\omega_{12} - 6\omega_{10}^2\omega_5^2v_2^2\omega_{15}^2\omega_{12} - 12\omega_{10}^3\omega_5v_2^2\omega_{21}\omega_{12} + 12\omega_{10}^3\omega_5\omega_{21}\omega_{12} + 18\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 - 18\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2\omega_{12} + 18\omega_{10}^3\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_{12} -$
$36\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 6\omega_{10}^3\omega_5^2v_2^2\omega_{15}^2 - 18\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 18\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2 - 36\omega_{10}^3c_s^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^3\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} -$

$36\omega_{10}^2c_s^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 18\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3\omega_5v_2^2\omega_{15}^2\omega_{12} +$
$18\omega_{10}^3\omega_5v_2^2\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3\omega_5\omega_{15}^2\omega_{12} - 36\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{12} - 12\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{12} - 18\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^3\omega_5^2\omega_{15}^2)\frac{c_s^2v_2}{12\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (12\omega_1^2\omega_5^2 + 36\omega_7^2c_s^2\omega_5^3 + 18\omega_7^2\omega_1^2\omega_5 + 54\omega_7c_s^2\omega_1\omega_5^3 + 18\omega_7\omega_1\omega_5^3v_2^2 - 36\omega_7^2c_s^2\omega_5^2 - 12\omega_7^2\omega_1^2 + 4\omega_7^2\omega_1^2\omega_5^2v_2^2 - 12\omega_1^2\omega_5^3 +$
$36\omega_7c_s^2\omega_1\omega_5^2 - 12\omega_7\omega_5^3v_2^2 - 54\omega_7^2c_s^2\omega_1^2\omega_5 - 12\omega_1\omega_5^3v_2^2 + 12\omega_7^2c_s^2\omega_1^2\omega_5^2 - 12\omega_7\omega_1\omega_5^2 - \omega_7^2\omega_1^2\omega_5^3 + 5\omega_7^2c_s^2\omega_1^2\omega_5^3 - 36c_s^2\omega_1\omega_5^3 + 12\omega_7\omega_5^3 +$
$\omega_7^2\omega_1^2\omega_5^3v_2^2 + 12\omega_7\omega_1\omega_5^2v_2^2 - 4\omega_7^2\omega_1^2\omega_5^2 - 18\omega_7\omega_1\omega_5^3 + 12\omega_1^2\omega_5^3v_2^2 - 40\omega_7^2c_s^2\omega_1\omega_5^3 - 12\omega_7^2\omega_5^3 + 36c_s^2\omega_1^2\omega_5^3 + 12\omega_7^2\omega_1^2v_2^2 + 6\omega_7\omega_1^2\omega_5^3 - 6\omega_7^2\omega_1\omega_5^2 -$
$12\omega_7^2\omega_5^2v_2^2 + 18\omega_7^2c_s^2\omega_1\omega_5^2 + 12\omega_7^2\omega_1\omega_5^3 + 6\omega_7\omega_1^2\omega_5^2v_2^2 - 6\omega_7\omega_1^2\omega_5^2 - 36c_s^2\omega_1^2\omega_5^2 - 12\omega_7^2\omega_1\omega_5^3v_2^2 + 36\omega_7^2c_s^2\omega_1^2 + 12\omega_7^2\omega_5^2 - 36\omega_7c_s^2\omega_5^3 + 12\omega_1\omega_5^3 -$
$18\omega_7^2\omega_1^2\omega_5v_2^2 + 18\omega_7c_s^2\omega_1^2\omega_5^2 - 12\omega_1^2\omega_5^2v_2^2 + 6\omega_7^2\omega_1\omega_5^2v_2^2 - 6\omega_7\omega_1^2\omega_5^3v_2^2 + 12\omega_7^2\omega_5^3v_2^2 - 18\omega_7c_s^2\omega_1^2\omega_5^3)\frac{c_s^2v_2}{12\omega_7^2\omega_1^2\omega_5^3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-72\omega_4^2c_s^4\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 - 27\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 4\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 - 28\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 - 36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 +$
$35\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 16\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 216\omega_3^2\omega_4^2c_s^2v_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3v_2^2 - 24\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 18\omega_4^2c_s^2\omega_1^3\omega_2^3 +$
$4\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 20\omega_3^2\omega_4^2c_s^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 15\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 32\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 138\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^4v_1^4\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2 +$
$24\omega_3^2\omega_4^2\omega_1^3v_1^4 + 36\omega_3^2\omega_4^2v_1^2v_2^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 12\omega_4^2c_s^2\omega_1^3\omega_2^2 - 36\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 74\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 49\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 27\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 -$
$9\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 - 52\omega_3^2\omega_4^2c_s^2\omega_1^3 - 8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 30\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^3 + 24\omega_4^2c_s^2\omega_1^2\omega_2^3 - 28\omega_3\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 12\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 -$
$25\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 108\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 12\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 66\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 +$
$9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 3\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 + 54\omega_4^2c_s^4\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2v_1^2\omega_2^3 + 16\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 - 4\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 96\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 -$
$3\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3 - 9\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 - 42\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^2 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 119\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 -$
$102\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 4\omega_3^2\omega_4^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 12\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2 - 12\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 18\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 + 36\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 +$
$4\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 4\omega_3^2\omega_4^2v_2^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 27\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 + 78\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 32\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 +$
$27\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 18\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 - 84\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 72\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 4\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 - 27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 + 216\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 +$
$138\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 + 16\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 + 72\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 - 324\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 + 16\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 - 58\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 36\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 +$
$108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3 + 72\omega_3^2\omega_4^2c_s^4\omega_1^3 + 36\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2 + 28\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 30\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2\omega_2 + 324\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 - 32\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 -$
$36\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 + 28\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 60\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2^2 + 12\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 48\omega_3^2\omega_4^2\omega_1^3v_1^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 - 60\omega_3^2\omega_4^2v_1^4\omega_2^3)\frac{v_2}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1}$ **at** $\frac{\partial^4v_1}{\partial x_1^2\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = (3\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3\omega_5^2v_2^2\omega_{15}^2\omega_9\omega_{12} - 8\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}^3\omega_5^3\omega_{21}\omega_9\omega_{12}^2 +$
$3\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 8\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 4\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 7\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^3\omega_5^2\omega_{15}\omega_9\omega_{12}^2 +$
$4\omega_{10}^3\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12}^2 - 2\omega_{10}^2\omega_5^3v_2^2\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - \omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 2\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$9\omega_{10}^3\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + \omega_{10}^3\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 4\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 4\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$\omega_{10}^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 8\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 2\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}^3\omega_5v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$2\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 + 6\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3\omega_5^2\omega_{21}\omega_9\omega_{12}^2 +$
$2\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 - 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}^3\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 11\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$4\omega_{10}^3\omega_5^2v_2^2\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 4\omega_{10}^3\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 2\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 9\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$3\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 8\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 26\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$2\omega_{10}^3\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 3\omega_{10}^3\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^3\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 4\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^2\omega_5^3v_2^2\omega_{21}\omega_9\omega_{12}^2 +$
$3\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 8\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 2\omega_{10}^3\omega_5^3v_2^2\omega_{15}^2\omega_9\omega_{12}^2 - 5\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + \omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$
$2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 - 8\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 5\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3\omega_5^2v_2^2\omega_{15}\omega_9\omega_{12}^2 + 2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 13\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 15\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 24\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 4\omega_{10}^3\omega_5^2v_2^2\omega_{21}\omega_9\omega_{12}^2 - \omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$
$4\omega_{10}^2\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12}^2 + 4\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^3\omega_5^3v_2^2\omega_{15}\omega_9\omega_{12} - \omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$
$6\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 8\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 2\omega_{10}^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 16\omega_{10}^3c_s^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - \omega_{10}^3\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$
$4\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12}^2 + 12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 7\omega_{10}^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - 5\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2)\frac{\rho v_1v_2}{2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = (48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 + 6\omega_3\omega_1^2v_1^2\omega_2 + 12\omega_1^2v_2^2\omega_2^2 - 114\omega_3v_1^2\omega_2^3 + 12\omega_3\omega_1^2\omega_2^2 + 108\omega_3c_s^2\omega_1\omega_2^3 + 6\omega_1\omega_2^3 + 84\omega_3c_s^2\omega_1^3 + 36c_s^2\omega_1^2\omega_2^2 -$
$50\omega_3\omega_1^2v_1^2\omega_2^3 - 9\omega_3\omega_1v_2^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 - 66\omega_3c_s^2\omega_2^3 + 12\omega_3\omega_1^3v_2^2 - 18c_s^2\omega_1^3\omega_2 - 23\omega_3\omega_1^3\omega_2^2 - 9\omega_3\omega_1^3v_2^2\omega_2 - 12\omega_3\omega_1v_2^2\omega_2^2 - 66\omega_3\omega_1^2v_1^2\omega_2^2 +$

$48\omega_3\omega_1^3v_1^2 - 18c_s^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 + 141\omega_3\omega_1v_1^2\omega_2^3 + 60\omega_3\omega_1v_1^2\omega_2^2 + 18\omega_3\omega_1^2v_2^2\omega_2^2 - 75\omega_3\omega_1^3v_1^2\omega_2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 + 42\omega_3\omega_2^3 - 12\omega_3\omega_1^2v_2^2\omega_2 - 42\omega_3c_s^2\omega_1^2\omega_2^3 + 50\omega_3\omega_1^3v_1^2\omega_2^2 - 12\omega_3\omega_1\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 - 6\omega_1^3v_2^2\omega_2 - 36\omega_3\omega_1^3 - 60\omega_3\omega_1\omega_2^3 + 12\omega_3v_2^2\omega_2^3 - 6\omega_1v_2^2\omega_2^3 - 12\omega_1^2\omega_2^2)\frac{\rho v_1v_2}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2} = (-24 - 18c_s^2\omega - 12\omega^2 - c_s^2\omega^3 - 108\omega v_2^2 + 8c_s^2\omega^2 + 36\omega + 36\omega^2v_2^2 + 12c_s^2 + 72v_2^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2} = (84\omega_{10}^3c_s^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 4\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 24\omega_{10}^2c_s^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^4\omega_5^2\omega_{15}\omega_{12} + 78\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2 + 108\omega_{10}^3v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}^3v_1^2\omega_5^2v_2^2\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2v_1^2\omega_5^2\omega_{15}^2\omega_{12} - 6\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} + 36\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15}\omega_{12} - 36\omega_{10}^3v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_{12} + 36\omega_{10}^3c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2 - 72\omega_{10}^3v_1^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_{12} + 36\omega_{10}^3v_1^2\omega_5^3v_2^2\omega_{21}\omega_{12} - 18\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{15}^2 - 6\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2\omega_{12} + 18\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2 - 12v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 18\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} - 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2 - 42\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 18\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^3c_s^2v_1^2\omega_5^3\omega_{15}^2 + 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^2v_1^2\omega_5^3\omega_{15}\omega_{12} + 36v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2 + 24\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2v_1^2\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{12} + 18\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^3v_1^2\omega_5^2v_2^2\omega_{21}\omega_{12} + 18\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 180\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2\omega_{12} + 12\omega_{10}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2\omega_{12} + 12\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_{12} - 144\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^2v_1^2\omega_5^2\omega_{15}^2 - 48\omega_{10}^3c_s^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 36\omega_{10}^3v_1^2\omega_5^2v_2^2\omega_{15}^2 - \omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} - 84\omega_{10}^2c_s^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{12} - 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}\omega_{12} + 6\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2 - 12\omega_{10}^3v_1^2\omega_5^3\omega_{21}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{15}\omega_{12} + 18\omega_{10}^3v_1^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} - 36\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2 - 24\omega_{10}^3c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{10}^2c_s^4\omega_5^3\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}\omega_{12} - 18\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 54\omega_{10}v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 24\omega_{10}^3v_1^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2\omega_{12} + 36\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15}^2 - 36\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{12} - 24\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 108\omega_{10}c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}^3v_1^2\omega_5^3v_2^2\omega_{15}\omega_{12} - 72\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^3c_s^4\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 18\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2 + 12\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{12} + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 + 6\omega_{10}^3c_s^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} + 72\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^2v_1^2\omega_5^2v_2^2\omega_{21}\omega_{15}^2 + 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 72\omega_{10}c_s^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} + 72\omega_{10}^2v_1^2\omega_5v_2^2\omega_{21}\omega_{15}^2\omega_{12} + 24\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{21}\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^4\omega_{21}\omega_{15}^2\omega_{12} + 24\omega_{10}^2c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}^2 + 60\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^4\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 24\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{21}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^3\omega_{15}\omega_{12} - 6\omega_{10}^3c_s^4\omega_5^3\omega_{15}^2 - 18\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{15}^2\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36\omega_{10}^3v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}^2v_1^2\omega_5^3v_2^2\omega_{21}\omega_{15}^2 - 24\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}\omega_{12} + 12\omega_{10}^3v_1^2\omega_5^2\omega_{21}\omega_{12} - 18\omega_{10}^3v_1^2\omega_5^3v_2^2\omega_{15}^2 - 132\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}c_s^4\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15}^2\omega_{12} - 12\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2 - 6\omega_{10}^2c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 24\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 24\omega_{10}^3c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 60\omega_{10}^3c_s^2\omega_5v_2^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12} - 36\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15}^2\omega_{12} + 12\omega_{10}^3c_s^2v_1^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{15}\omega_{12} + 36\omega_{10}^3v_1^2\omega_5^2v_2^2\omega_{15}\omega_{12} + 24\omega_{10}^3c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_{12} - 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}^3c_s^2v_1^2\omega_5^3\omega_{21}\omega_{12} + 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12})\frac{\rho}{12\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2} = (12\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^2\omega_{21}\omega_{15}\omega_{12} + 72\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15} - 12\omega_{10}^2\omega_5^2\omega_{12} + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{12} - 18\omega_{10}\omega_5^3v_2^2\omega_{15}\omega_{12} - 6\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} + 18\omega_{10}^2\omega_5^3v_2^2\omega_{15}\omega_{12} + 24\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}c_s^2\omega_5^3\omega_{12} + 12\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{12} + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - \omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}\omega_5^3\omega_{21}\omega_{12} - 12\omega_{10}^2\omega_5^2\omega_{15} - 36\omega_{10}\omega_5v_2^2\omega_{21}\omega_{15}\omega_{12} - 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 4\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}^2\omega_5^2v_2^2\omega_{15}\omega_{12} + 12\omega_{10}^2\omega_5^3\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{15} + 12\omega_{10}^2c_s^2\omega_5^3\omega_{21}\omega_{12} - 36\omega_{10}^2\omega_5^3v_2^2\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15}\omega_{12} - 12\omega_{10}c_s^2\omega_5^3\omega_{21}\omega_{12} + 6\omega_{10}^2\omega_5^3\omega_{15} + 36\omega_{10}^2\omega_5v_2^2\omega_{21}\omega_{12} - 36\omega_5^2v_2^2\omega_{21}\omega_{15}\omega_{12} - 18\omega_{10}^2\omega_5^3v_2^2\omega_{15} + 18\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15} - 12\omega_{10}\omega_5^3\omega_{12} + 6\omega_{10}\omega_5^3\omega_{15}\omega_{12} - 12\omega_{10}\omega_5^2\omega_{21}\omega_{12} - 24\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^2c_s^2\omega_5^3\omega_{15} + 36\omega_{10}^2\omega_5^3v_2^2\omega_{21}\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 12\omega_{10}^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 36\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{12} + 18\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2c_s^2\omega_5^3\omega_{12} - 12\omega_{10}c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} + 36\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^2\omega_{15} - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36\omega_{10}\omega_5^3v_2^2\omega_{12} + 36\omega_{10}^2\omega_5^2v_2^2\omega_{15} + 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{12} - 18\omega_{10}\omega_5^3v_2^2\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}c_s^2\omega_5^3\omega_{15}\omega_{12} + 18\omega_{10}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2\omega_5\omega_{21}\omega_{12} + 36\omega_{10}^2\omega_5^2v_2^2\omega_{12} - 24\omega_{10}^2c_s^2\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}^2c_s^2\omega_5^2\omega_{12} + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15}\omega_{12} - 36\omega_{10}\omega_5^2v_2^2\omega_{21}\omega_{15} - 72\omega_{10}^2\omega_5^2v_2^2\omega_{21}\omega_{12} + 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}c_s^2\omega_5^2\omega_{21}\omega_{15})\frac{c_s^2\rho}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2} = (24\omega_1^2\omega_5^2 + 36\omega_1\omega_5^2v_2^2 + 12\omega_7\omega_1\omega_5 + 24\omega_1^3\omega_5 + 18\omega_7c_s^2\omega_1\omega_5^2 + 72\omega_1^2\omega_5v_2^2 - 12\omega_7c_s^2\omega_1\omega_5 + 36\omega_7\omega_1^2\omega_5v_2^2 - 12\omega_1^3\omega_5^2 - 36\omega_7\omega_1^2v_2^2 + 12c_s^2\omega_1\omega_5^2 + 36\omega_1^3\omega_5^2v_2^2 - 24\omega_1^2\omega_5 - 12\omega_7c_s^2\omega_1^2 - 72\omega_1^3\omega_5v_2^2 - \omega_7c_s^2\omega_1^3\omega_5^2 - 24c_s^2\omega_1^3\omega_5 - 36\omega_7\omega_1\omega_5v_2^2 + 12\omega_7c_s^2\omega_1^2\omega_5 + 36\omega_1^3v_2^2 - 24c_s^2\omega_1^2\omega_5^2 - 12\omega_1^3 + 12\omega_7\omega_1^2 - 12\omega_7\omega_1^2\omega_5 + 24c_s^2\omega_1^2\omega_5 - 4\omega_7c_s^2\omega_1^2\omega_5^2 - 72\omega_1^2\omega_5^2v_2^2 + 12c_s^2\omega_1^3\omega_5^2 - 12\omega_1\omega_5^2 - 12\omega_7c_s^2\omega_5^2 + 12c_s^2\omega_1^3)\frac{c_s^2\rho}{12\omega_7\omega_1^3\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2} = (-18\omega_3^2\omega_1v_1^2\omega_2^3 + 76\omega_3^2\omega_4c_s^4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 + 9\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 36\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 54\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 + 48\omega_3^2\omega_4c_s^2\omega_1v_2^2\omega_2^3 - 42\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 + 12\omega_3^2\omega_4\omega_1v_2^2\omega_2^2 - 30\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4\omega_1^3v_2^2\omega_2 - 90\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 - 6\omega_3\omega_4\omega_1^2v_1^2\omega_2^2 + 132\omega_3^2\omega_4c_s^2\omega_1^3v_1^2 - 28\omega_3^2\omega_4c_s^4\omega_1\omega_2^2 + 16\omega_3^2\omega_4c_s^4\omega_1^3 - 48\omega_3^2\omega_4v_1^4\omega_2^3 - 216\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 54\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 + 8\omega_3\omega_4c_s^4\omega_1\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 - 6\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2 - 48\omega_3^2\omega_4\omega_1^3v_1^2 + 24\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 + 12\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 + 9\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 - 84\omega_3^2\omega_4c_s^2\omega_1v_2^2\omega_2^2 - 18\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 6\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 - 12\omega_3\omega_4\omega_1^3v_1^2\omega_2 - 18\omega_4\omega_1^2v_1^2\omega_2^3 - 18\omega_3^2\omega_1^2v_1^4\omega_2^2 - 12\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 - 96\omega_3^2\omega_4c_s^2v_2^2\omega_2^3 -$

$68\omega_3^2\omega_4c_s^4\omega_2^3 + 54\omega_3^2\omega_4\omega_1v_1^4\omega_2^3 - 54\omega_3c_s^2\omega_1^3v_1^2\omega_2^2 - 18\omega_3\omega_1^2v_1^2\omega_2^3 + 24\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2 - 18\omega_3^2\omega_1^3v_1^2\omega_2^2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^3 -$
$\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^3 - 12\omega_3^2\omega_4v_2^2\omega_2^3 - 144\omega_3^2\omega_4\omega_1v_1^2v_2^2\omega_2^2 + 54\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 + 6\omega_3\omega_4\omega_1v_1^4\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 + 4\omega_3^2\omega_4\omega_2^3 - 18\omega_3\omega_1^3v_1^4\omega_2^2 -$
$18\omega_3^2\omega_1^2v_1^4\omega_2^3 - \omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 + 32\omega_3^2\omega_4c_s^2\omega_1\omega_2^2 - 90\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3\omega_4c_s^2\omega_1\omega_2^3 - 90\omega_3^2\omega_4\omega_1v_1^2v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_1^4\omega_2 + 60\omega_3\omega_4c_s^2\omega_1v_2^2\omega_2^3 -$
$4\omega_3^2\omega_4\omega_1\omega_2^2 - 54\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 + 12\omega_3^2\omega_4\omega_1v_1^4\omega_2^2 - 18\omega_4\omega_1^3v_1^4\omega_2^2 - 48\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2 + 6\omega_3\omega_4\omega_1^2v_1^4\omega_2^2 - 108\omega_3^2\omega_4c_s^2v_1^2\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 -$
$36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2 + 18\omega_3\omega_4c_s^4\omega_1^3\omega_2^3 - 20\omega_3^2\omega_4c_s^2\omega_1^3 + 30\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 + 12\omega_3^2\omega_4v_1^2\omega_2^3 - 8\omega_3\omega_4c_s^2\omega_1^3\omega_2 + 2\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 + 132\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 +$
$36\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 36\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2 - 9\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 + 18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 - 9\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 +$
$2\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 18\omega_3^2\omega_1v_1^4\omega_2^3 + 12\omega_3^2\omega_4\omega_1^2v_2^2\omega_2 - 36\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 - 18\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^2 + 72\omega_3^2\omega_4\omega_1^3v_1^2v_2^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 -$
$36\omega_3^2\omega_4\omega_1^2v_1^2v_2^2\omega_2 + 108\omega_3^2\omega_4v_1^2v_2^2\omega_2^3 - 56\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 126\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 - 3\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 - 18\omega_3\omega_4c_s^2\omega_1v_1^2\omega_2^3 - 28\omega_3^2\omega_4c_s^4\omega_1^2\omega_2 -$
$6\omega_3\omega_4\omega_1v_1^2\omega_2^3 + 12\omega_3^2\omega_4\omega_1^2v_1^4\omega_2 + 180\omega_3^2\omega_4\omega_1^2v_1^2v_2^2\omega_2^2 + 12\omega_3^2\omega_4c_s^2\omega_1^3v_2^2 + 18\omega_3^2\omega_1^2v_1^2\omega_2^3 + 54\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 + 18\omega_3\omega_1^3v_1^2\omega_2^2 - 18\omega_3\omega_4c_s^2\omega_1^3\omega_2^3 +$
$\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 + 28\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^2 - 36\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 - 12\omega_3^2\omega_4\omega_1^3v_2^2 - 2\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2 - 54\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^2 + 66\omega_3^2\omega_4\omega_1^3v_1^2\omega_2 + 8\omega_3\omega_4c_s^4\omega_1^3\omega_2 -$
$24\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 150\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_2^3 - 90\omega_3^2\omega_4\omega_1^3v_1^2v_2^2\omega_2 + 18\omega_4\omega_1^3v_1^2\omega_2^2 - 6\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 - 14\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 +$
$36\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 + 12\omega_3\omega_4\omega_1^3v_1^2\omega_2 - 14\omega_3^2\omega_4c_s^4\omega_1^3\omega_2 + 18\omega_3^2\omega_1^2v_1^2\omega_2^2 + 18\omega_4\omega_1^2v_1^4\omega_2^3 + 24\omega_3^2\omega_4\omega_1^3v_1^4 + 54\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 + 90\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 +$
$28\omega_3^2\omega_4c_s^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1^2\omega_2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 + 18\omega_3^2\omega_1^3v_1^4\omega_2^2 - 24\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 + 18\omega_3\omega_1^2v_1^4\omega_2^3 + 66\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 - 12\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_2^2 +$
$\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 - 54\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 32\omega_3^2\omega_4c_s^2\omega_1^2\omega_2 - 174\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2 + 216\omega_3^2c_s^2\omega_1v_2^2\omega_2^3 + 56\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (-13\omega_{10}^3\omega_5^2v_2^4\omega_{15} + 16\omega_{10}^2\omega_5v_2^2\omega_{15} - 72\omega_{10}c_s^2\omega_5^2v_2^2\omega_{15} + 8\omega_{10}^3c_s^4\omega_5\omega_{15} - 8\omega_{10}^2c_s^4\omega_5\omega_{15}^2 - 4\omega_{10}c_s^4\omega_5^2\omega_{15} + 4\omega_{10}^2\omega_5^2v_2^2 +$
$13\omega_{10}^2\omega_5^2v_2^4\omega_{15}^2 + 36\omega_{10}\omega_5^2v_2^2\omega_{15}^2 - 4\omega_{10}^2c_s^2\omega_{15}^2 - 4\omega_{10}^3c_s^2\omega_5^2 + 84\omega_{10}^3c_s^2\omega_5v_2^2\omega_{15} + 12\omega_{10}c_s^2\omega_5^2\omega_{15}^2 + 8\omega_{10}^2v_2^4\omega_{15}^2 - 8c_s^2\omega_5^2\omega_{15}^2 +$
$120\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15} - 24\omega_5^2v_2^2\omega_{15}^2 - 4\omega_{10}^2c_s^4\omega_5^2 - 4\omega_{10}^3c_s^4\omega_{15} + 51\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15}^2 + 96c_s^2\omega_5^2v_2^2\omega_{15}^2 + 4\omega_{10}^3\omega_5v_2^2 + 20\omega_{10}\omega_5v_2^4\omega_{15}^2 - 8\omega_{10}^3c_s^2\omega_5\omega_{15} +$
$8\omega_{10}^2c_s^2\omega_5\omega_{15}^2 + 8\omega_{10}^3v_2^2\omega_{15} + 20\omega_{10}\omega_5^2v_2^2\omega_{15} + 4\omega_{10}^3c_s^2\omega_5 + 4\omega_{10}c_s^2\omega_5^2\omega_{15} + 36\omega_{10}^2c_s^2v_2^2\omega_{15}^2 - 12\omega_{10}c_s^4\omega_5^2\omega_{15}^2 - 24\omega_{10}^3c_s^2\omega_5v_2^2 +$
$32\omega_{10}^2\omega_5^2v_2^4\omega_{15} - 20\omega_{10}^3\omega_5v_2^2\omega_{15} + 20\omega_{10}^2\omega_5v_2^2\omega_{15}^2 + 8c_s^4\omega_5^2\omega_{15}^2 - 36\omega_{10}^3c_s^2v_2^2\omega_{15} - 144\omega_{10}c_s^2\omega_5^2v_2^2\omega_{15}^2 + 4\omega_{10}^3\omega_5^2v_2^4 + 8\omega_{10}^2c_s^4\omega_5^2\omega_{15} -$
$84\omega_{10}^2c_s^2\omega_5v_2^2\omega_{15}^2 + 4\omega_{10}^2c_s^4\omega_{15}^2 - 36\omega_{10}\omega_5^2v_2^4\omega_{15}^2 + 4\omega_{10}^3c_s^4\omega_5^2 + 4\omega_{10}c_s^4\omega_5\omega_{15}^2 + 24\omega_{10}^3c_s^2\omega_5^2v_2^2 - 8\omega_{10}^2v_2^2\omega_{15}^2 - 4\omega_{10}^3\omega_5v_2^4 + 24\omega_5^2v_2^4\omega_{15}^2 +$
$4\omega_{10}^2c_s^2\omega_5^2 - 16\omega_{10}^2\omega_5v_2^4\omega_{15} + 13\omega_{10}^3\omega_5^2v_2^2\omega_{15} + 4\omega_{10}^3c_s^2\omega_5^2\omega_{15} - 4\omega_{10}^3\omega_5^2v_2^2 - 4\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 + 72\omega_{10}c_s^2\omega_5v_2^2\omega_{15}^2 - 13\omega_{10}^2\omega_5^2v_2^2\omega_{15}^2 -$
$8\omega_{10}^2c_s^2\omega_5^2\omega_{15} - 4\omega_{10}c_s^2\omega_5\omega_{15}^2 - 4\omega_{10}^2\omega_5^2v_2^4 + 20\omega_{10}^3\omega_5v_2^4\omega_{15} - 32\omega_{10}^2\omega_5^2v_2^2\omega_{15} - 20\omega_{10}^2\omega_5v_2^4\omega_{15}^2 - 24\omega_{10}^2c_s^2\omega_5^2v_2^2 - 51\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15} +$
$4\omega_{10}^3c_s^2\omega_{15} - 20\omega_{10}\omega_5v_2^2\omega_{15}^2 - 4\omega_{10}^3c_s^4\omega_5^2\omega_{15} + 4\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2 - 20\omega_{10}\omega_5^2v_2^4\omega_{15} - 8\omega_{10}^3v_2^4\omega_{15} - 48\omega_{10}^2c_s^2\omega_5v_2^2\omega_{15} - 4\omega_{10}^3c_s^4\omega_5)\frac{v_1}{4\omega_{10}^3\omega_5^2\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (8\omega_3^2\omega_1\omega_2^2 + 24\omega_3^2\omega_1^2v_2^2\omega_2^3 - 8\omega_3^2\omega_1v_1^2\omega_2^3 - 24\omega_3^2\omega_1^2v_1^2v_2^2\omega_2^3 + 8\omega_3c_s^2\omega_1v_1^2\omega_2^3 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 20\omega_3^2c_s^2\omega_1^3v_1^2\omega_2 - 84\omega_3^2c_s^4\omega_1^3\omega_2 -$
$6\omega_3^2c_s^4\omega_1^2\omega_2^3 + 12c_s^2\omega_1^3\omega_2^2 + 8\omega_3^2c_s^2\omega_1v_1^2\omega_2^2 - 12c_s^2\omega_1^3v_1^2\omega_2^2 + 216\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 + 4\omega_3^2\omega_1^3v_1^2\omega_2 + 24\omega_3^2v_2^2\omega_2^3 - 4\omega_3c_s^2\omega_1^3v_1^2\omega_2 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 -$
$48\omega_3^2\omega_1^2v_1^2v_2^2\omega_2^2 - 8\omega_3^2\omega_1v_1^2\omega_2^2 + 36c_s^4\omega_1^2\omega_2^2 - 8\omega_3c_s^2\omega_1\omega_2^3 + 8\omega_3^2\omega_1\omega_2^3 - 24\omega_3^2\omega_1^2v_2^2\omega_2^2 + 216\omega_3^2c_s^2\omega_1^3v_2^2 - 72\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2c_s^4\omega_2^3 +$
$22\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 - 48\omega_3^2\omega_1^3v_1^2v_2^2\omega_2 + 4\omega_3^2\omega_1^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 - 72\omega_3^2\omega_1v_2^4\omega_2^2 - 72\omega_3^2v_1^2v_2^2\omega_2^3 + 24\omega_3^2\omega_1^3v_1^2v_2^2\omega_2^2 + 24\omega_3^2\omega_1^3v_1^2v_2^2 - 36\omega_3^2c_s^4\omega_1^2\omega_2 -$
$36\omega_3^2\omega_1^3v_2^4\omega_2 - 4\omega_3^2\omega_1^3v_1^2 + 18\omega_3c_s^2\omega_1^3v_1^2\omega_2^2 - \omega_3^2\omega_1^3v_1^2\omega_2^2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 + 72\omega_3^2c_s^4\omega_1^3 + 56\omega_3^2c_s^2\omega_1^3\omega_2 - 8\omega_3^2\omega_2^3 + 24\omega_3^2\omega_1^2v_1^2v_2^2\omega_2 - 36c_s^4\omega_1^3\omega_2^2 -$
$24\omega_3^2\omega_1^2v_2^2\omega_2 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 + 2\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 36\omega_3^2\omega_1v_2^4\omega_2^3 - 12c_s^2\omega_1^2\omega_2^3 - 20\omega_3^2c_s^2v_1^2\omega_2^3 + 24\omega_3^2\omega_1^3v_2^4 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 +$
$12c_s^2\omega_1^2v_1^2\omega_2^3 + 48\omega_3^2v_2^4\omega_2^3 - 12\omega_3c_s^4\omega_1^3\omega_2 + 72\omega_3^2\omega_1^2v_2^4\omega_2^2 - 54\omega_3c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^2\omega_2 + 4\omega_3^2\omega_1^2v_1^2\omega_2 + 20\omega_3^2c_s^2\omega_2^3 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 24\omega_3^2\omega_1^3v_2^2\omega_2^2 +$
$96\omega_3^2\omega_1v_1^2v_2^2\omega_2^3 - 12\omega_3c_s^4\omega_1^2\omega_2^2 - 4\omega_3^2c_s^2\omega_1^2v_1^2\omega_2 + 72\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^2 - 48\omega_3^2\omega_1^3v_2^2 + 24\omega_3^2\omega_1v_1^2v_2^2\omega_2^2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^3\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 +$
$\omega_3^2\omega_1^2v_1^2\omega_2^3 - 18\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 + 18\omega_3c_s^2\omega_1^2\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 + 4\omega_3c_s^2\omega_1^3\omega_2 - 60\omega_3^2\omega_1v_2^2\omega_2^3 - 216\omega_3^2c_s^2\omega_1v_2^2\omega_2^2 + 16\omega_3^2c_s^2\omega_1^3v_1^2 -$
$2\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^2 - 324\omega_3^2c_s^2\omega_1^3v_2^2\omega_2 + 48\omega_3^2\omega_1v_2^2\omega_2^2 + 4\omega_3^2\omega_1^2v_1^2\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 + 4\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_3c_s^2\omega_1^2v_1^2\omega_2^2 + 8\omega_3^2v_1^2\omega_2^3 + 84\omega_3^2\omega_1^3v_2^2\omega_2 +$
$42\omega_3^2c_s^4\omega_1\omega_2^3 - 52\omega_3^2c_s^2\omega_1^3 - 2\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2 + 108\omega_3^2c_s^2\omega_1v_2^2\omega_2^3)\frac{v_1}{36\omega_3^2\omega_1^3\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^3v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = (-42c_s^2\omega^2v_2^2 + 36c_s^2\omega + 4\omega^3v_2^4 - 36v_2^4 - 54\omega v_2^2 + 12c_s^2\omega^3v_2^2 - 12c_s^2\omega^2 + 36c_s^4 - 26\omega^2v_2^4 + 54\omega v_2^4 + 26\omega^2v_2^2 - 36c_s^2v_2^2 - 54c_s^4\omega -$
$24c_s^2 + 20c_s^4\omega^2 + 36v_2^2 - c_s^4\omega^3 + 54c_s^2\omega v_2^2 - 4\omega^3v_2^2)\frac{\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = (48\omega_{10}^3\omega_5^2v_2^4\omega_{15} - 48\omega_{10}^3c_s^2v_2^2\omega_{15}^2 - 19\omega_{10}^2\omega_5^3v_2^2\omega_{15}^2 + 12\omega_{10}^3c_s^4\omega_5\omega_{15} + 27\omega_{10}^3\omega_5^3v_2^2\omega_{15} - 12\omega_{10}^3\omega_5v_2^2\omega_{15}^2 + 12\omega_{10}^2\omega_5^2v_2^4\omega_{15}^2 +$
$12\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{15}^2 + 12\omega_{10}^3\omega_5^3v_2^4 + 12c_s^4\omega_5^3\omega_{15}^2 + 72\omega_5^3v_2^4\omega_{15}^2 - 12\omega_{10}^3c_s^2\omega_5v_2^2\omega_{15} + 12\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 12\omega_{10}c_s^4\omega_5^3\omega_{15}^2 - 90\omega_{10}\omega_5^3v_2^4\omega_{15}^2 +$
$12\omega_{10}^3c_s^4\omega_{15}^2 - 12\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15} + 6\omega_{10}^3c_s^2\omega_5\omega_{15}^2 + 12\omega_{10}^2\omega_5^3v_2^2 - 36\omega_{10}\omega_5^3v_2^4\omega_{15} + 162\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15}^2 - 12\omega_{10}^3c_s^2\omega_5\omega_{15} - 21\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{15} +$

$102\omega_{10}^3c_s^2\omega_5v_2^2\omega_{15}^2 - 4\omega_{10}^3\omega_5^3v_2^2\omega_{15}^2 - 12\omega_{10}c_s^4\omega_5^2\omega_{15}^2 - 24\omega_{10}^2\omega_5^2v_2^4\omega_{15} - 12c_s^2\omega_5^3\omega_{15}^2 + 24\omega_{10}^3\omega_5v_2^2\omega_{15} - 18\omega_{10}^3\omega_5^2v_2^4\omega_{15}^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{15}^2 - 24\omega_{10}^2c_s^4\omega_5\omega_{15}^2 - 60\omega_{10}^2\omega_5^3v_2^2\omega_{15} - 108\omega_{10}c_s^2\omega_5^2v_2^2\omega_{15}^2 - 12\omega_{10}^3\omega_5^2v_2^4 + 12\omega_{10}^2c_s^4\omega_5^2\omega_{15} - 48\omega_{10}^2c_s^2\omega_5v_2^2\omega_{15}^2 - 72\omega_5^3v_2^2\omega_{15}^2 - 12\omega_{10}^3c_s^2\omega_5^2v_2^2 + 54\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15} - 12\omega_{10}^2\omega_5^3v_2^4 + 90\omega_{10}\omega_5^3v_2^2\omega_{15}^2 - 81\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15}^2 + 13\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15} - 48\omega_{10}^3\omega_5^2v_2^2\omega_{15} + 19\omega_{10}^2\omega_5^3v_2^4\omega_{15}^2 + \omega_{10}^2c_s^4\omega_5^3\omega_{15}^2 + 18\omega_{10}^3c_s^2\omega_5^2\omega_{15} + 12\omega_{10}^3\omega_5^2v_2^2 - 6\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 + 6\omega_{10}^3c_s^4\omega_5^3\omega_{15} - 27\omega_{10}^3\omega_5^3v_2^4\omega_{15} - 12\omega_{10}^2c_s^2\omega_5^3v_2^2 - 12\omega_{10}^2\omega_5^2v_2^2\omega_{15}^2 + 12\omega_{10}^3\omega_5v_2^4\omega_{15}^2 - 36\omega_{10}c_s^2\omega_5^3v_2^2\omega_{15} + 4\omega_{10}^3\omega_5^3v_2^4\omega_{15}^2 - \omega_{10}^3c_s^4\omega_5^3\omega_{15}^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15} - 24\omega_{10}^3\omega_5v_2^4\omega_{15} - 306\omega_{10}c_s^2\omega_5^3v_2^2\omega_{15}^2 + 24\omega_{10}^2\omega_5^2v_2^2\omega_{15} + 18\omega_{10}^3\omega_5^2v_2^2\omega_{15}^2 + 12\omega_{10}^3c_s^2\omega_5^3v_2^2 - 5\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2 - 6\omega_{10}^2c_s^4\omega_5^3\omega_{15} + 60\omega_{10}^2\omega_5^3v_2^4\omega_{15} + 36\omega_{10}\omega_5^3v_2^2\omega_{15} + 30\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15} - \omega_{10}^2c_s^2\omega_5^3\omega_{15}^2 - 18\omega_{10}^3c_s^4\omega_5^2\omega_{15} + 6\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2 - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15} - 12\omega_{10}^3\omega_5^3v_2^2 + 60\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2 + 252c_s^2\omega_5^3v_2^2\omega_{15}^2)\frac{\rho}{12\omega_{10}^3\omega_5^3\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = (36\omega_{10}^3\omega_5^2v_2^4\omega_{15} - 19\omega_{10}^2\omega_5^3v_2^2\omega_{15}^2 + 12\omega_{10}^3c_s^4\omega_5\omega_{15} + 39\omega_{10}^3\omega_5^3v_2^2\omega_{15} + 12\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{15}^2 + 36\omega_{10}^3\omega_5^3v_2^4 + 12c_s^4\omega_5^3\omega_{15}^2 + 72\omega_5^3v_2^4\omega_{15}^2 + 36\omega_{10}^3c_s^2\omega_5v_2^2\omega_{15} + 12\omega_{10}c_s^2\omega_5^2\omega_{15}^2 - 12\omega_{10}c_s^4\omega_5^3\omega_{15}^2 - 90\omega_{10}\omega_5^3v_2^4\omega_{15}^2 + 12\omega_{10}^3c_s^4\omega_{15}^2 + 36\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15} + 6\omega_{10}^3c_s^2\omega_5\omega_{15}^2 + 36\omega_{10}^2\omega_5^3v_2^2 - 36\omega_{10}\omega_5^3v_2^4\omega_{15} + 18\omega_{10}^2c_s^2\omega_5^2v_2^2\omega_{15}^2 - 12\omega_{10}^3c_s^2\omega_5\omega_{15} - 99\omega_{10}^3c_s^2\omega_5^3v_2^2\omega_{15} - 18\omega_{10}^3c_s^2\omega_5v_2^2\omega_{15}^2 - 4\omega_{10}^3\omega_5^3v_2^2\omega_{15}^2 - 12\omega_{10}c_s^4\omega_5^2\omega_{15}^2 - 12c_s^2\omega_5^3\omega_{15}^2 - 6\omega_{10}^3\omega_5^2v_2^4\omega_{15}^2 + 12\omega_{10}c_s^2\omega_5^3\omega_{15}^2 - 24\omega_{10}^3c_s^4\omega_5\omega_{15}^2 - 72\omega_{10}^2\omega_5^3v_2^2\omega_{15} - 36\omega_{10}c_s^2\omega_5^2v_2^2\omega_{15}^2 - 36\omega_{10}^3\omega_5^2v_2^4 + 12\omega_{10}^2c_s^4\omega_5^2\omega_{15} - 72\omega_5^3v_2^2\omega_{15}^2 - 108\omega_{10}^3c_s^2\omega_5^2v_2^2 + 198\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15} - 36\omega_{10}^2\omega_5^3v_2^4 + 90\omega_{10}\omega_5^3v_2^2\omega_{15}^2 - 3\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15}^2 + 13\omega_{10}^3c_s^4\omega_5^2\omega_{15}^2 + 6\omega_{10}^2c_s^2\omega_5^3\omega_{15} - 36\omega_{10}^3\omega_5^2v_2^2\omega_{15} + 19\omega_{10}^3\omega_5^3v_2^4\omega_{15}^2 + \omega_{10}^2c_s^4\omega_5^3\omega_{15}^2 + 18\omega_{10}^3c_s^2\omega_5^2\omega_{15} + 36\omega_{10}^3\omega_5^3v_2^2 - 6\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 + 6\omega_{10}^3c_s^4\omega_5^3\omega_{15} - 39\omega_{10}^3\omega_5^3v_2^4\omega_{15} - 108\omega_{10}^2c_s^2\omega_5^3v_2^2 - 108\omega_{10}c_s^2\omega_5^3v_2^2\omega_{15} + 4\omega_{10}^3\omega_5^3v_2^4\omega_{15}^2 - \omega_{10}^3c_s^4\omega_5^3\omega_{15}^2 - 12\omega_{10}^2c_s^2\omega_5^2\omega_{15} - 306\omega_{10}c_s^2\omega_5^3v_2^2\omega_{15}^2 + 6\omega_{10}^3\omega_5^2v_2^2\omega_{15}^2 + 108\omega_{10}^3c_s^2\omega_5^3v_2^2 - 5\omega_{10}^3c_s^2\omega_5^2\omega_{15}^2 - 6\omega_{10}^2c_s^4\omega_5^3\omega_{15} + 72\omega_{10}^2\omega_5^3v_2^4\omega_{15} + 36\omega_{10}\omega_5^3v_2^2\omega_{15} + 54\omega_{10}^3c_s^2\omega_5^2v_2^2\omega_{15} - \omega_{10}^2c_s^2\omega_5^3\omega_{15}^2 - 18\omega_{10}^3c_s^4\omega_5^2\omega_{15} + 6\omega_{10}^2c_s^4\omega_5^2\omega_{15}^2 - 6\omega_{10}^3c_s^2\omega_5^3\omega_{15} - 36\omega_{10}^3\omega_5^3v_2^2 + 60\omega_{10}^2c_s^2\omega_5^3v_2^2\omega_{15}^2 + 252c_s^2\omega_5^3v_2^2\omega_{15}^2)\frac{\rho}{12\omega_{10}^3\omega_5^3\omega_{15}^2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = (-72\omega_7\omega_1^3\omega_5^2v_2^2 + 6\omega_7^2c_s^4\omega_1^2\omega_5^2 - 306\omega_7^2c_s^2\omega_1^3\omega_5v_2^2 + 4\omega_7^2\omega_1^3\omega_5^3v_2^4 - \omega_7^2c_s^2\omega_1^3\omega_5^2 - 108c_s^2\omega_1^3\omega_5^2v_2^2 - 3\omega_7^2c_s^2\omega_1^2\omega_5^3v_2^2 - 12\omega_7c_s^2\omega_1\omega_5^3 + 72\omega_7^2\omega_1^3v_2^4 - 12\omega_7^2c_s^4\omega_1^3\omega_5 - 108\omega_7c_s^2\omega_1^3\omega_5v_2^2 + 13\omega_7^2c_s^4\omega_1^2\omega_5^3 + 54\omega_7c_s^2\omega_1^2\omega_5^3v_2^2 + 12\omega_7^2c_s^4\omega_1^3 - 36\omega_7\omega_1^3\omega_5v_2^4 - 36\omega_1^3\omega_5^3v_2^2 + 12\omega_7^2c_s^2\omega_1^2\omega_5 + 36\omega_7\omega_1^2\omega_5^3v_2^4 + 18\omega_7^2c_s^2\omega_1^2\omega_5^2v_2^2 + 108c_s^2\omega_1^3\omega_5^3v_2^2 + 19\omega_7^2\omega_1^3\omega_5^2v_2^4 - 6\omega_7^2c_s^2\omega_1^2\omega_5^2 - 36\omega_1^2\omega_5^3v_2^4 + \omega_7^2c_s^4\omega_1^3\omega_5^2 + 12\omega_7c_s^4\omega_1\omega_5^3 + 39\omega_7\omega_1^3\omega_5^3v_2^2 - 5\omega_7^2c_s^2\omega_1^2\omega_5^3 + 12\omega_7^2c_s^2\omega_1^3\omega_5 + 36\omega_1^3\omega_5^2v_2^2 + 36\omega_7c_s^2\omega_1^2\omega_5^2v_2^2 + 6\omega_7^2\omega_1^2\omega_5^3v_2^2 - 12\omega_7^2c_s^4\omega_1^2\omega_5 - \omega_7^2c_s^4\omega_1^3\omega_5^3 + 90\omega_7^2\omega_1^3\omega_5v_2^2 + 36\omega_1^2\omega_5^3v_2^2 + 6\omega_7^2c_s^2\omega_1\omega_5^3 - 39\omega_7\omega_1^3\omega_5^3v_2^4 + 6\omega_7c_s^2\omega_1^3\omega_5^2 - 12\omega_7^2c_s^2\omega_1^3 + 12\omega_7c_s^4\omega_1^2\omega_5^2 - 19\omega_7^2\omega_1^3\omega_5^2v_2^2 - 99\omega_7c_s^2\omega_1^3\omega_5^3v_2^2 - 6\omega_7c_s^2\omega_1^3\omega_5^3 - 36\omega_7^2c_s^2\omega_1^2\omega_5v_2^2 - 6\omega_7^2\omega_1^2\omega_5^3v_2^4 + 12\omega_7^2c_s^4\omega_5^3 - 90\omega_7^2\omega_1^3\omega_5v_2^4 + 12\omega_7^2c_s^2\omega_1^3\omega_5^3v_2^2 - 36\omega_1^3\omega_5^2v_2^4 - 18\omega_7c_s^4\omega_1^2\omega_5^3 - 4\omega_7^2\omega_1^3\omega_5^3v_2^2 - 24\omega_7^2c_s^4\omega_1\omega_5^3 + 198\omega_7c_s^2\omega_1^3\omega_5^2v_2^2 - 6\omega_7c_s^4\omega_1^3\omega_5^2 - 72\omega_7^2\omega_1^3v_2^2 + 72\omega_7\omega_1^3\omega_5^2v_2^4 - 12\omega_7c_s^2\omega_1^2\omega_5^2 - 18\omega_7^2c_s^2\omega_1\omega_5^3v_2^2 + 36\omega_7\omega_1^3\omega_5v_2^2 + 6\omega_7c_s^4\omega_1^3\omega_5^3 + 36\omega_7c_s^2\omega_1\omega_5^3v_2^2 + 36\omega_1^3\omega_5^3v_2^4 - 36\omega_7\omega_1^2\omega_5^3v_2^2 - 108c_s^2\omega_1^2\omega_5^3v_2^2 + 60\omega_7^2c_s^2\omega_1^3\omega_5^2v_2^2 + 252\omega_7^2c_s^2\omega_1^3v_2^2 + 18\omega_7c_s^2\omega_1^2\omega_5^3)\frac{\rho}{12\omega_7^2\omega_1^3\omega_5^3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = (54\omega_4^2\omega_1^3v_2^4\omega_3^2 - 288\omega_3^2\omega_4^2\omega_1v_2^4\omega_3^2 + 108\omega_3^2\omega_1^2v_2^2\omega_3^2 - 492\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 72\omega_3^2\omega_4c_s^4\omega_1\omega_3^2 + 24\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 + 336\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 + 324\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_3^2 + 36\omega_3\omega_4^2c_s^2\omega_1^2\omega_3^2 - 2\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 + 18\omega_3\omega_4^2c_s^4\omega_1^3\omega_3^2 - 12\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 + 288\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 24\omega_3\omega_4^2\omega_1^3v_2^4\omega_2 + 72\omega_4^2\omega_1^2v_2^2\omega_3^2 + 54\omega_3^2\omega_1^3v_2^4\omega_2^3 + 24\omega_3^2\omega_4^2c_s^2v_1^2\omega_3^2 - 96\omega_3^2\omega_4^2\omega_1^3v_2^2 - 216\omega_4^2c_s^2\omega_1^2v_2^2\omega_3^2 - 108\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 - 852\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 8\omega_3^2\omega_4^2c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 108\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 + 12\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 - 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2 - 36\omega_4^2\omega_1^3v_2^4\omega_2^2 - 432\omega_3^2\omega_4^2v_1^2v_2^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 - 24\omega_3\omega_4^2\omega_1v_2^4\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 324\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 192\omega_3^2\omega_4^2v_2^4\omega_2^3 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 72\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 - 36\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 36\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 - 297\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3 + 240\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 576\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^3 + 117\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 108\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 117\omega_3\omega_4^2\omega_1^3v_2^4\omega_2^3 - 36\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 16\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 20\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 - 18\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 38\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 + 288\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^3 + 72\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 48\omega_3^2\omega_4^2v_1^2\omega_2^3 + 264\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 - 216\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^3 - 72\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 - 180\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 40\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 + 108\omega_3\omega_4^2\omega_1^3v_2^4\omega_2^2 - 297\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^2 + 48\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 - 108\omega_3\omega_4\omega_1^3v_2^2\omega_2^3 + 60\omega_3\omega_4^2\omega_1^2v_2^2\omega_2 + 168\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^3 + 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 - 96\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2 + 86\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 - 16\omega_3^2\omega_4^2\omega_2^3 + 80\omega_3^2\omega_4^2c_s^4\omega_2^3 + 204\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 144\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2 - 108\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 162\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 + 468\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 96\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 + 36\omega_4^2\omega_1^3v_2^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 + 24\omega_3\omega_4^2\omega_1v_2^2\omega_2^3 - 48\omega_3^2\omega_4^2v_2^2\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2\omega_4\omega_1v_2^4\omega_2^3 - 172\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 108\omega_3^2\omega_1^2v_2^4\omega_2^3 - 54\omega_4^2\omega_1^3v_2^2\omega_2^3 - 108\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 + 72\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 162\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 + 48\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 + 16\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 + 16\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 + 264\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 - 54\omega_3^2\omega_1^3v_2^2\omega_2^3 + 24\omega_3\omega_4^2\omega_1^3v_2^2\omega_2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 - 72\omega_4^2\omega_1^2v_2^4\omega_2^3 - 540\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 18\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 - 492\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 108\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2 + 48\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^2 + 180\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^2 + 40\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 - 60\omega_3\omega_4^2\omega_1^2v_2^4\omega_2^2 + 108\omega_3\omega_4\omega_1^3v_2^4\omega_2^3 + 432\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2^3 + 48\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 648\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 - 72\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 117\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^3 + 32\omega_3^2\omega_4^2c_s^4\omega_1^3 - 144\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 + 117\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^3 - 16\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2\omega_2 - 12\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 + 174\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 108\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 - 288\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 - 86\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 32\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 - 288\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 24\omega_3^2\omega_4^2\omega_1^3v_1^2 + 216\omega_3\omega_4^2\omega_1^2v_2^4\omega_2^3 - 18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_2^4\omega_2^2)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^3v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = (-48\omega_{10}^2\omega_5v_2^2\omega_{15} - 16\omega_{10}^2\omega_5^2v_2^2 - 16\omega_{10}^2c_s^2\omega_5\omega_{15} - 120\omega_{10}\omega_5^2v_2^2\omega_{15}^2 + 20\omega_{10}^2c_s^2\omega_{15}^2 + 16\omega_{10}^3c_s^2\omega_5^2 - 72\omega_{10}c_s^2\omega_5^2\omega_{15}^2 + 48c_s^2\omega_5^2\omega_{15}^2 +$

$80\omega_5^2v_2^2\omega_{15}^2 - 40\omega_{10}^2\omega_5^2\omega_{15} - 16\omega_{10}^3\omega_5v_2^2 - 17\omega_{10}^2\omega_5^2\omega_{15}^2 + 44\omega_{10}^3c_s^2\omega_5\omega_{15} - 44\omega_{10}^2c_s^2\omega_5\omega_{15}^2 - 28\omega_{10}^3v_2^2\omega_{15} - 64\omega_{10}\omega_5^2v_2^2\omega_{15} - 12\omega_{10}^2\omega_{15}^2 - 16\omega_{10}^3c_s^2\omega_5 - 32\omega_{10}c_s^2\omega_5^2\omega_{15} - 24\omega_{10}\omega_5\omega_{15}^2 + 68\omega_{10}^3\omega_5v_2^2\omega_{15} - 28\omega_{10}^3\omega_5\omega_{15} - 68\omega_{10}^2\omega_5v_2^2\omega_{15}^2 + 12\omega_{10}^3\omega_{15} + 48\omega_{10}\omega_5^2\omega_{15}^2 + 17\omega_{10}^3\omega_5^2\omega_{15} - 32\omega_5^2\omega_{15}^2 + 28\omega_{10}^2v_2^2\omega_{15}^2 - 16\omega_{10}^2c_s^2\omega_5^2 - 43\omega_{10}^3\omega_5^2v_2^2\omega_{15} - 25\omega_{10}^3c_s^2\omega_5^2\omega_{15} + 28\omega_{10}^2\omega_5\omega_{15}^2 + 16\omega_{10}^3\omega_5^2v_2^2 + 25\omega_{10}^2c_s^2\omega_5^2\omega_{15}^2 - 8\omega_{10}^3\omega_5^2 + 43\omega_{10}^2\omega_5^2v_2^2\omega_{15}^2 + 56\omega_{10}^2c_s^2\omega_5^2\omega_{15} + 32\omega_{10}c_s^2\omega_5\omega_{15}^2 + 8\omega_{10}^3\omega_5 + 104\omega_{10}^2\omega_5^2v_2^2\omega_{15} + 16\omega_{10}^2\omega_5\omega_{15} + 8\omega_{10}^2\omega_5^2 - 20\omega_{10}^3c_s^2\omega_{15} + 64\omega_{10}\omega_5v_2^2\omega_{15}^2 + 24\omega_{10}\omega_5^2\omega_{15})\frac{\rho v_1v_2}{4\omega_{10}^3\omega_5^2\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = (-54\omega_3c_s^2\omega_1\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 6\omega_3\omega_1^2v_1^2\omega_2 + 27c_s^2\omega_1^3\omega_2^2 - 6\omega_1^3v_1^2\omega_2 - 24\omega_3v_1^2\omega_2^3 - 51\omega_3\omega_1^2\omega_2^2 + 27\omega_3c_s^2\omega_1\omega_2^3 - 12\omega_1\omega_2^3 + 12\omega_1v_1^2\omega_2^3 + 84\omega_3c_s^2\omega_1^3 - 18c_s^2\omega_1^2\omega_2^2 - 5\omega_3\omega_1^2v_1^2\omega_2^3 - 66\omega_3\omega_1v_2^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 - 12\omega_3c_s^2\omega_2^3 + 48\omega_3\omega_1^3v_2^2 - 18c_s^2\omega_1^3\omega_2 + 9\omega_1^3v_1^2\omega_2^2 - 27c_s^2\omega_1^2\omega_2^3 - 5\omega_3\omega_1^3\omega_2^2 - 66\omega_3\omega_1^3v_2^2\omega_2 - 120\omega_3\omega_1v_2^2\omega_2^2 - 9\omega_3\omega_1^2v_1^2\omega_2^2 + 12\omega_3\omega_1^3v_1^2 + 36c_s^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 + 27\omega_3\omega_1v_1^2\omega_2^3 - 9\omega_1^3\omega_2^2 + 6\omega_3\omega_1v_1^2\omega_2^2 + 132\omega_3\omega_1^2v_2^2\omega_2^2 - 18\omega_3\omega_1^3v_1^2\omega_2 + 15\omega_3c_s^2\omega_1^3\omega_2^2 - 12\omega_3\omega_2^3 - 12\omega_3\omega_1^2v_2^2\omega_2 - 15\omega_3c_s^2\omega_1^2\omega_2^3 + 5\omega_3\omega_1^3v_1^2\omega_2^2 + 42\omega_3\omega_1\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 + 9\omega_1^2\omega_2^3 - 6\omega_1^2v_1^2\omega_2^2 - 36\omega_3\omega_1^3 + 3\omega_3\omega_1\omega_2^3 + 81\omega_3c_s^2\omega_1^2\omega_2^2 + 84\omega_3v_2^2\omega_2^3 - 9\omega_1^2v_1^2\omega_2^3 + 6\omega_1^2\omega_2^2)\frac{\rho v_1v_2}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y^4\rho}$ at $\frac{\partial^4\rho}{\partial x_2^4}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^4\rho} = (12 + 404c_s^2\omega^2v_2^2 + 198c_s^2\omega - \omega^3 - 9\omega^3v_2^4 + 8\omega^2 + 144v_2^4 + 6c_s^2\omega^3 + 234\omega v_2^2 - 34c_s^2\omega^3v_2^2 - 78c_s^2\omega^2 + 144c_s^4 + 90\omega^2v_2^4 - 216\omega v_2^4 - 18\omega - 98\omega^2v_2^2 + 672c_s^2v_2^2 - 216c_s^4\omega - 132c_s^2 + 82c_s^4\omega^2 - 156v_2^2 - 5c_s^4\omega^3 - 1008c_s^2\omega v_2^2 + 10\omega^3v_2^2)\frac{v_2}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho} = (12 + 6\omega_{10}^3c_s^2 - 98\omega_{10}^2v_2^2 + 144v_2^4 - 216\omega_{10}v_2^4 - 18\omega_{10} - 78\omega_{10}^2c_s^2 + 10\omega_{10}^3v_2^2 - 216\omega_{10}c_s^4 + 144c_s^4 + 404\omega_{10}^2c_s^2v_2^2 + 82\omega_{10}^2c_s^4 - 9\omega_{10}^3v_2^4 + 198\omega_{10}c_s^2 + 672c_s^2v_2^2 - 1008\omega_{10}c_s^2v_2^2 - 132c_s^2 - 34\omega_{10}^3c_s^2v_2^2 - \omega_{10}^3 - 5\omega_{10}^3c_s^4 + 90\omega_{10}^2v_2^4 + 8\omega_{10}^2 - 156v_2^2 + 234\omega_{10}v_2^2)\frac{v_2}{12\omega_{10}^3}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^4\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^4\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^4\rho} = (12 + 8\omega_5^2 + 90\omega_5^2v_2^4 - \omega_5^3 + 198c_s^2\omega_5 + 144v_2^4 - 34c_s^2\omega_5^3v_2^2 + 234\omega_5v_2^2 - 9\omega_5^3v_2^4 - 78c_s^2\omega_5^2 + 404c_s^2\omega_5^2v_2^2 + 144c_s^4 + 6c_s^2\omega_5^3 + 10\omega_5^3v_2^2 - 1008c_s^2\omega_5v_2^2 - 216c_s^4\omega_5 + 672c_s^2v_2^2 - 18\omega_5 - 132c_s^2 - 5c_s^4\omega_5^3 - 98\omega_5^2v_2^2 - 156v_2^2 - 216\omega_5v_2^4 + 82c_s^4\omega_5^2)\frac{v_2}{12\omega_5^3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^4\rho} = (808\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 - 80\omega_3c_s^2\omega_1\omega_2^2 - 98\omega_3\omega_1^3v_2^2\omega_2^2 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 - 48c_s^4\omega_1^2\omega_2^2 - 264\omega_3\omega_1^2v_2^4\omega_2^2 + 760\omega_3c_s^2v_2^2\omega_2^3 - 16\omega_3\omega_1^2\omega_2^2 + 30\omega_3\omega_1^3v_2^2\omega_2^3 - 1088\omega_3c_s^2\omega_1^2v_2^2\omega_2^2 + 320\omega_3c_s^2\omega_1\omega_2^3 + 24c_s^4\omega_1^3\omega_2 + 180\omega_3\omega_1^2v_2^4\omega_2^3 - 52\omega_3c_s^2\omega_1^3 + 16c_s^2\omega_1^2\omega_2^2 + 72\omega_3c_s^4\omega_1\omega_2^2 + 144\omega_3v_2^4\omega_2^3 + 328\omega_3\omega_1v_2^2\omega_2^3 + 8\omega_3\omega_1^2\omega_2 - 184\omega_3c_s^2\omega_2^3 - 3\omega_3\omega_1^3\omega_2^3 + 440\omega_3c_s^2\omega_1^2v_2^2\omega_2 - 28\omega_3\omega_1^3v_2^2 + 96\omega_3\omega_1^2v_2^4\omega_2 - 16c_s^2\omega_1^2v_2^2\omega_2^2 - 372\omega_3c_s^4\omega_1\omega_2^3 - 8c_s^2\omega_1^3\omega_2 + 8\omega_3\omega_1^3\omega_2^2 + 94\omega_3\omega_1^3v_2^2\omega_2 - 176\omega_3\omega_1v_2^2\omega_2^2 + 8c_s^2\omega_1v_2^2\omega_2^3 - 8c_s^2\omega_1\omega_2^3 - 156\omega_3c_s^4\omega_1^3\omega_2 - 27\omega_3\omega_1^3v_2^4\omega_2^3 + 164\omega_3c_s^4\omega_1^2\omega_2^3 + 18\omega_3c_s^2\omega_1^3\omega_2^3 - 80\omega_3c_s^2\omega_1^2\omega_2 + 72\omega_3c_s^4\omega_1^3 + 404\omega_3c_s^2\omega_1^3v_2^2\omega_2^2 - 196\omega_3\omega_1^2v_2^2\omega_2^3 - 120\omega_3c_s^4\omega_1^2\omega_2^2 + 8c_s^2\omega_1^3v_2^2\omega_2 + 90\omega_3\omega_1^3v_2^4\omega_2^2 + 160\omega_3c_s^2\omega_1^3v_2^2 + 24\omega_3\omega_1^3v_2^4 + 280\omega_3\omega_1^2v_2^2\omega_2^2 - 102\omega_3c_s^2\omega_1^3v_2^2\omega_2^3 - 78\omega_3c_s^2\omega_1^3\omega_2^2 + 16\omega_3\omega_2^3 - 104\omega_3\omega_1^2v_2^2\omega_2 - 156\omega_3c_s^2\omega_1^2\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 24c_s^4\omega_1\omega_2^3 - 1472\omega_3c_s^2\omega_1v_2^2\omega_2^3 + 122\omega_3c_s^2\omega_1^3\omega_2 - 84\omega_3\omega_1^3v_2^4\omega_2 + 72\omega_3c_s^4\omega_1^2\omega_2 - 15\omega_3c_s^4\omega_1^3\omega_2^3 + 168\omega_3\omega_1v_2^4\omega_2^2 + 4\omega_3\omega_1^3 + 656\omega_3c_s^2\omega_1v_2^2\omega_2^2 - 28\omega_3\omega_1\omega_2^3 + 152\omega_3c_s^2\omega_1^2\omega_2^2 - 464\omega_3c_s^2\omega_1^3v_2^2\omega_2 - 160\omega_3v_2^2\omega_2^3 - 300\omega_3\omega_1v_2^4\omega_2^3 + 216\omega_3c_s^4\omega_2^3 + 82\omega_3c_s^4\omega_1^3\omega_2^2)\frac{v_2}{36\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y^4v_2}$ at $\frac{\partial^4v_2}{\partial x_2^4}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^4v_2} = (12 + 252c_s^2\omega^2v_2^2 + 54c_s^2\omega - \omega^3 - 29\omega^3v_2^4 + 8\omega^2 + 504v_2^4 + 2c_s^2\omega^3 + 378\omega v_2^2 - 18c_s^2\omega^3v_2^2 - 22c_s^2\omega^2 + 24c_s^4 + 310\omega^2v_2^4 - 756\omega v_2^4 - 18\omega - 154\omega^2v_2^2 + 432c_s^2v_2^2 - 36c_s^4\omega - 36c_s^2 + 14c_s^4\omega^2 - 252v_2^2 - c_s^4\omega^3 - 648c_s^2\omega v_2^2 + 14\omega^3v_2^2)\frac{\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^4v_2} = (12 + 2\omega_{10}^3c_s^2 - 154\omega_{10}^2v_2^2 + 504v_2^4 - 756\omega_{10}v_2^4 - 18\omega_{10} - 22\omega_{10}^2c_s^2 + 14\omega_{10}^3v_2^2 - 36\omega_{10}c_s^4 + 24c_s^4 + 252\omega_{10}^2c_s^2v_2^2 + 14\omega_{10}^2c_s^4 - 29\omega_{10}^3v_2^4 + 54\omega_{10}c_s^2 + 432c_s^2v_2^2 - 648\omega_{10}c_s^2v_2^2 - 36c_s^2 - 18\omega_{10}^3c_s^2v_2^2 - \omega_{10}^3 - \omega_{10}^3c_s^4 + 310\omega_{10}^2v_2^4 + 8\omega_{10}^2 - 252v_2^2 + 378\omega_{10}v_2^2)\frac{\rho}{12\omega_{10}^3}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^4v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^4v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^4_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_y v_2} = (12 + 8\omega_5^2 + 310\omega_5^2 v_2^4 - \omega_5^3 + 54c_s^2\omega_5 + 504v_2^4 - 18c_s^2\omega_5^3 v_2^2 + 378\omega_5 v_2^2 - 29\omega_5^3 v_2^4 - 22c_s^2\omega_5^2 + 252c_s^2\omega_5^2 v_2^2 + 24c_s^4 + 2c_s^2\omega_5^3 + 14\omega_5^3 v_2^2 - 648c_s^2\omega_5 v_2^2 - 36c_s^4\omega_5 + 432c_s^2 v_2^2 - 18\omega_5 - 36c_s^2 - c_s^4\omega_5^3 - 154\omega_5^2 v_2^2 - 252v_2^2 - 756\omega_5 v_2^4 + 14c_s^4\omega_5^2)\frac{\rho}{12\omega_5^3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_y v_2} = (504\omega_3 c_s^2\omega_1^2 v_2^2\omega_2^3 - 16\omega_3 c_s^2\omega_1\omega_2^2 - 154\omega_3\omega_1^3 v_2^2\omega_2^2 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 - 16c_s^4\omega_1^2\omega_2^2 - 888\omega_3\omega_1^2 v_2^4\omega_2^2 + 552\omega_3 c_s^2 v_2^2\omega_2^3 - 16\omega_3\omega_1^2\omega_2^2 + 42\omega_3\omega_1^3 v_2^2\omega_2^3 - 576\omega_3 c_s^2\omega_1^2 v_2^2\omega_2^2 + 96\omega_3 c_s^2\omega_1\omega_2^3 + 8c_s^4\omega_1^3\omega_2 + 620\omega_3\omega_1^2 v_2^4\omega_2^3 - 20\omega_3 c_s^2\omega_1^3 + 16c_s^2\omega_1^2\omega_2^2 + 8\omega_3 c_s^4\omega_1\omega_2^2 + 528\omega_3 v_2^4\omega_2^3 + 552\omega_3\omega_1 v_2^2\omega_2^3 + 8\omega_3\omega_1^2\omega_2 - 56\omega_3 c_s^2\omega_2^3 - 3\omega_3\omega_1^3\omega_2^3 + 264\omega_3 c_s^2\omega_1^2 v_2^2\omega_2 - 60\omega_3\omega_1^3 v_2^2 + 336\omega_3\omega_1^2 v_2^4\omega_2 - 48c_s^2\omega_1^2 v_2^2\omega_2^2 - 68\omega_3 c_s^4\omega_1\omega_2^3 - 8c_s^2\omega_1^3\omega_2 + 8\omega_3\omega_1^3\omega_2^2 + 174\omega_3\omega_1^3 v_2^2\omega_2 - 240\omega_3\omega_1 v_2^2\omega_2^2 + 24c_s^2\omega_1 v_2^2\omega_2^3 - 8c_s^2\omega_1\omega_2^3 - 32\omega_3 c_s^4\omega_1^3\omega_2 - 87\omega_3\omega_1^3 v_2^4\omega_2^3 + 28\omega_3 c_s^4\omega_1^2\omega_2^3 + 6\omega_3 c_s^2\omega_1^3\omega_2^3 - 16\omega_3 c_s^2\omega_1^2\omega_2 + 16\omega_3 c_s^4\omega_1^3 + 252\omega_3 c_s^2\omega_1^3 v_2^2\omega_2^2 - 308\omega_3\omega_1^2 v_2^2\omega_2^3 - 8\omega_3 c_s^4\omega_1^2\omega_2^2 + 24c_s^2\omega_1^3 v_2^2\omega_2 + 310\omega_3\omega_1^3 v_2^4\omega_2^2 + 144\omega_3 c_s^2\omega_1^3 v_2^2 + 96\omega_3\omega_1^3 v_2^4 + 408\omega_3\omega_1^2 v_2^2\omega_2^2 - 54\omega_3 c_s^2\omega_1^3 v_2^2\omega_2^3 - 22\omega_3 c_s^2\omega_1^3\omega_2^2 + 16\omega_3\omega_2^3 - 168\omega_3\omega_1^2 v_2^2\omega_2 - 44\omega_3 c_s^2\omega_1^2\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 8c_s^4\omega_1\omega_2^3 - 1008\omega_3 c_s^2\omega_1 v_2^2\omega_2^3 + 42\omega_3 c_s^2\omega_1^3\omega_2 - 312\omega_3\omega_1^3 v_2^4\omega_2 + 8\omega_3 c_s^4\omega_1^2\omega_2 - 3\omega_3 c_s^4\omega_1^3\omega_2^3 + 552\omega_3\omega_1 v_2^4\omega_2^2 + 4\omega_3\omega_1^3 + 336\omega_3 c_s^2\omega_1 v_2^2\omega_2^2 - 28\omega_3\omega_1\omega_2^3 + 24\omega_3 c_s^2\omega_1^2\omega_2^2 - 360\omega_3 c_s^2\omega_1^3 v_2^2\omega_2 - 288\omega_3 v_2^2\omega_2^3 - 1068\omega_3\omega_1 v_2^4\omega_2^3 + 40\omega_3 c_s^4\omega_2^3 + 14\omega_3 c_s^4\omega_1^3\omega_2^2)\frac{\rho}{36\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}^3_x \mathrm{D}_z \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1^3 \partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = (-4\omega_6\omega_{13}\omega_7\omega_8 v_1^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_{12}^2 + 4\omega_6\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2 + 24\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2 - 4\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6\omega_{13} c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_7\omega_{14} v_1^2\omega_5\omega_9\omega_{12}^2 + 12\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2 - 9\omega_6\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6\omega_{13}\omega_7 c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6\omega_{13} c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_7 v_1^2\omega_5\omega_9^2\omega_{12}^2 - 6\omega_6\omega_{13} c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6\omega_{13}\omega_7 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 12\omega_6\omega_{13} c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12}^2 - 3\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 4\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} - 12\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2 - 6\omega_6\omega_{13} c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 12\omega_{13} c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 9\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_9\omega_{12}^2 - 12c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} + 4\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12}^2 - 12\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_{12}^2 + 4\omega_6\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 6\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 3\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - 24\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 12\omega_6\omega_{13}\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13} c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 4\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 4\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9\omega_{12}^2 - 4\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 4\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12} + 3\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9\omega_{12}^2 + 6\omega_6\omega_{13} c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_7\omega_{14} v_1^2\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_{14} v_1^2\omega_5^2\omega_9\omega_{12}^2 + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6\omega_{13}\omega_7 c_s^2\omega_5\omega_9^2\omega_{12}^2 - 4\omega_6\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12}^2 + 12\omega_6\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2 - 12\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_{12}^2 + 6\omega_6 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} - 12\omega_6\omega_{13}\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_7 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13} v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 4\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12} + 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 12\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_5\omega_9\omega_{12}^2 - 3\omega_6\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2)\frac{v_1 v_2 v_3}{4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x \mathrm{D}_z \rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = (\omega_1 v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2 v_3^2 - 3c_s^2\omega_2)\frac{v_1 v_2 v_3}{12\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}^3_x \mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3 \partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (-12\omega_6\omega_{13}\omega_7\omega_8 v_1^2\omega_5\omega_9^2\omega_{12}^2 + 6\omega_6\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_{12}^2 + 4\omega_6\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2 +$
$8\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2 - 4\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6\omega_{13}\omega_7\omega_{14} v_1^2\omega_5\omega_9\omega_{12}^2 +$
$4\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2 -$
$3\omega_6\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7 c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12} +$
$12\omega_6\omega_{13}\omega_7 v_1^2\omega_5\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12} - 3\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 -$
$4\omega_6\omega_{13}c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12}^2 - 3\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 -$
$12\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2 - 4\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 -$
$2\omega_6\omega_{13}\omega_7 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2 - 2\omega_6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 +$
$3\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_9\omega_{12}^2 - 4c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$
$2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} + 12\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 24\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12}^2 +$
$12\omega_6\omega_{13}\omega_7\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_{12}^2 + 12\omega_6\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12}^2 - 12\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2 -$
$12\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 3\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 -$
$8\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 -$
$2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 12\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 4\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$
$6\omega_6\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9\omega_{12}^2 - 4\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 12\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12} +$
$9\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 12\omega_6\omega_{13}\omega_7\omega_{14} v_1^2\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12} - 12\omega_6\omega_{13}\omega_{14} v_1^2\omega_5^2\omega_9\omega_{12}^2 +$
$4\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6\omega_{13}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2 +$
$6\omega_6\omega_{13}\omega_7\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7 c_s^2\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12}^2 + 4\omega_6\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$
$4\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_{12}^2 + 2\omega_6 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 24\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12}^2 -$
$12\omega_6\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} - 12\omega_6\omega_{13}\omega_7 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6\omega_{13} v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 12\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 -$
$2\omega_6\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12} + 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_5\omega_9\omega_{12}^2 - 9\omega_6\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 +$
$2\omega_6\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 6\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2)\frac{\rho v_2 v_3}{4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (\omega_1 v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2 v_3^2 - 3c_s^2\omega_2)\frac{\rho v_2 v_3}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}^3_x\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^3\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_2} = (2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{12}^2 - \omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^3 + \omega_7^2\omega_{14}\omega_8 v_1^2\omega_5^3\omega_{12}^2 + 13\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 + 2\omega_7\omega_8 v_1^2\omega_5^3\omega_{12}^2 -$
$7\omega_7 c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 11\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - 2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2 - 2\omega_7^2\omega_8 v_1^2\omega_5^3\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_{12}^2 - \omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2\omega_7^2\omega_8\omega_5^3\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 4\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - \omega_7^2\omega_{14}\omega_8 v_1^2\omega_5^2\omega_{12}^2 - 2\omega_7^2 c_s^2\omega_8\omega_5^3\omega_{12}^2 -$
$2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_{12} - \omega_7^2\omega_{14}\omega_8^2\omega_5^3 + \omega_7\omega_8^2\omega_5^3\omega_{12}^2 - 2\omega_7^2\omega_8\omega_5^2\omega_{12}^2 + 2\omega_7 c_s^2\omega_8\omega_5^3\omega_{12}^2 - 6\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - \omega_7\omega_{14}\omega_8 v_1^2\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_8 v_1^2\omega_5^2\omega_{12}^2 +$
$2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 5\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - 2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12} - \omega_7\omega_8^2 v_1^2\omega_5^3\omega_{12}^2 + \omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^3\omega_{12} + 7\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7^2\omega_8^2\omega_5^3\omega_{12} +$
$\omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + \omega_7^2 c_s^2\omega_8^2\omega_5^3\omega_{12}^2 + 2\omega_7 c_s^2\omega_{14}\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_8^2 v_1^2\omega_5^2\omega_{12} + \omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^3 + 4\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} - \omega_7 c_s^2\omega_8^2\omega_5^3\omega_{12}^2 -$
$\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + \omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2\omega_7^2 c_s^2\omega_{14}\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2 + 2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - 2\omega_7\omega_8\omega_5^3\omega_{12}^2 + \omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_{12}^2 - 8\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_{12}^2 +$
$\omega_7^2\omega_8^2 v_1^2\omega_5^3\omega_{12}^2 - 2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2 + 4\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_{12} + 2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{12} - \omega_7^2\omega_8^2 v_1^2\omega_5^3\omega_{12} + 6\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5\omega_{12}^2 - \omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 2\omega_7^2\omega_8^2\omega_5^2\omega_{12} - 2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_{12} - \omega_7^2 c_s^2\omega_8^2\omega_5^3\omega_{12} - \omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^3\omega_{12} -$
$2\omega_7^2\omega_8^2 v_1^2\omega_5^2\omega_{12}^2 - 5\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - 2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - \omega_7^2\omega_8^2\omega_5^3\omega_{12}^2 + 2\omega_7^2 c_s^2\omega_{14}\omega_5^2\omega_{12}^2)\frac{\rho v_1 v_3}{2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_2} = (-18\omega_3^2\omega_4 c_s^2 - 3\omega_3^2\omega_1 v_3^2 - 6\omega_3\omega_4\omega_1 v_1^2 + 18\omega_4^2 c_s^2\omega_1 - 2\omega_3\omega_4^2\omega_1 v_3^2 + 18\omega_3\omega_4^2 c_s^2 + 6\omega_3^2\omega_4 - 6\omega_3^2\omega_4 v_3^2 - 6\omega_4^2 v_1^2 - 18\omega_3\omega_4 c_s^2\omega_1 -$
$2\omega_3^2\omega_4\omega_1 + 6\omega_3\omega_4^2 v_3^2 + 2\omega_3\omega_4^2\omega_1 + 2\omega_3^2\omega_4\omega_1 v_3^2 + 12\omega_3\omega_4 v_1^2 + 3\omega_4^2\omega_1 v_1^2 + 6\omega_3^2 v_3^2 + 3\omega_4^2\omega_1 v_3^2 - 6\omega_3^2 v_1^2 - 6\omega_3\omega_4^2 c_s^2\omega_1 + 6\omega_3\omega_4\omega_1 - 6\omega_4^2\omega_1 -$

$12\omega_3\omega_4 + 12\omega_4^2 - 6\omega_4^2 v_3^2 + 36\omega_3\omega_4 c_s^2 + 6\omega_3^2\omega_4 c_s^2\omega_1 - 6\omega_3\omega_4^2 + 3\omega_3^2\omega_1 v_1^2 - 36\omega_4^2 c_s^2)\frac{\rho v_1 v_3}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^3 \partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (2 - 2v_1^2 + 3c_s^2\omega - \omega + \omega v_1^2 - 6c_s^2)\frac{\rho v_1 v_2}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (12\omega_6\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 18\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}\omega_7^2\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 +$
$12\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_8\omega_5\omega_9^2\omega_{12}^2 +$
$42\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7^2\omega_8\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 +$
$6\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2\omega_{13} c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 54\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$
$24\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2 - 12\omega_6\omega_{13} c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 24\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 +$
$18\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^2\omega_{12} - 24\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}\omega_7^2\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 +$
$12\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 +$
$36\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 24\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 36\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2 +$
$12\omega_6^2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 36\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 +$
$30\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9\omega_{12}^2 +$
$6\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_{12}^2 + 6\omega_6^2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9\omega_{12}^2 -$
$6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^2 - 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 12\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 +$
$24\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 54\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} +$
$12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_9\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7^2\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 -$
$6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_{12}^2 + \omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 54\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 +$
$6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2 - 9\omega_6^2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 42\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$18\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 18\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9\omega_{12}^2 - 18\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 +$
$12\omega_6^2\omega_{13}\omega_7 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 18\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_6^2\omega_{13}\omega_7^2\omega_8^2 v_1^2\omega_5\omega_9^2\omega_{12} - \omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 9\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 +$
$12\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 9\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9\omega_{12}^2 +$
$6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 24\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7^2\omega_8^2 v_1^2\omega_5\omega_9^2\omega_{12}^2 + 3\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$3\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12} - 36\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12} - 12\omega_6\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^2\omega_{12}^2 -$
$12\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 9\omega_6^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 -$
$12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_9^2\omega_{12} - 36\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 54\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 +$
$12\omega_6^2\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5\omega_9^2\omega_{12} + 12\omega_6^2\omega_{13}\omega_7^2\omega_8 v_1^2\omega_5\omega_9^2\omega_{12}^2 -$
$12\omega_6^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2\omega_{12} - 3\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12} + 24\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2)\frac{\rho v_1 v_2}{12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (\omega_{13}v_1^2 - \omega_{13} + 3\omega_{13}c_s^2 + \omega_{13}v_1^2\omega_9 - 9c_s^2\omega_9 - \omega_{13}\omega_9 + 3\omega_{13}c_s^2\omega_9 - 3v_1^2\omega_9 + 3\omega_9)\frac{\rho v_1 v_2}{12\omega_{13}\omega_9}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-9\omega_4 c_s^2 - \omega_4\omega_{12} + 3\omega_4 + \omega_4 v_1^2\omega_{12} - 3\omega_4 v_1^2 + 3c_s^2\omega_{12} + v_1^2\omega_{12} + 3\omega_4 c_s^2\omega_{12} - \omega_{12})\frac{\rho v_1 v_2}{12\omega_4\omega_{12}}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (2\omega_3\omega_4\omega_1 v_1^2 - 18\omega_3\omega_4\omega_2 v_3^2 + 6\omega_3\omega_4 c_s^2\omega_2 + 18\omega_3\omega_4 c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4 c_s^2\omega_1 + 4\omega_3\omega_4 v_1^2\omega_2 - 27\omega_4 c_s^2\omega_1\omega_2 -$
$27\omega_3 c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 6\omega_3\omega_4\omega_1 v_1^2\omega_2 + 9\omega_3\omega_1\omega_2 - 9\omega_3\omega_1 v_1^2\omega_2 - 9\omega_4\omega_1 v_1^2\omega_2 + 18\omega_3\omega_4\omega_1 v_3^2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_1 v_2}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} =$
$(-\omega_7^2\omega_8^2\omega_5^2 - 2\omega_7\omega_8\omega_5^3 + 3\omega_7^2\omega_8^2\omega_5 + \omega_7\omega_5^3 - \omega_8^2\omega_5^2 - \omega_7^2\omega_5^3 + \omega_7^2\omega_8\omega_5 - 2\omega_7^2\omega_8^2 + \omega_8\omega_5^3 + \omega_7^2\omega_5^2 - \omega_7\omega_8^2\omega_5 + \omega_7^2\omega_8\omega_5^3 + 2\omega_7\omega_8^2\omega_5^2 - 2\omega_7^2\omega_8\omega_5^2)\frac{2c_s^4 v_3}{\omega_7^2\omega_8^2\omega_5^3}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (-252\omega_4^2c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3v_3^2 - 8\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2v_3^2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 864\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 8\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 - 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 30\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 81\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 176\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 - 60\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3v_3^2 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 + 432\omega_3^2\omega_4^2c_s^2v_1^2\omega_2^3 - 54\omega_4^2c_s^2\omega_1^3\omega_2^3 - 104\omega_3^2\omega_4^2c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 64\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 72\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 + 72\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4 - 56\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2v_3^2 - 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2v_3^2 + 8\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 + 24\omega_4^2c_s^2\omega_1^3\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^2v_3^2 + 112\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 10\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 + 27\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3v_3^2 - 104\omega_3^2\omega_4^2c_s^2\omega_1^3 + 32\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 84\omega_4^2c_s^2\omega_1^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 84\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 10\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 324\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 - 162\omega_3^2c_s^4\omega_1^3\omega_2^2 - 24\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 - 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2v_3^2 + 96\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 + 192\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 27\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 10\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 - 72\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2 + 162\omega_4^2c_s^4\omega_1^3\omega_2^3 - 96\omega_3^2\omega_4^2v_1^2\omega_2^3 - 60\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2v_3^2 - 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 + 80\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 108\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 192\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 27\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 72\omega_4^2c_s^4\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 - 432\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2 - 30\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2\omega_4^2v_1^2\omega_2^3v_3^2 - 168\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_2^3 + 32\omega_3^2\omega_4^2c_s^2\omega_2^3v_3^2 + 144\omega_3^2\omega_4^2c_s^4\omega_2^3 + 64\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 - 108\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 192\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 24\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 108\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 - 168\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 216\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 10\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 + 81\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 432\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 - 8\omega_3^2\omega_4^2\omega_2^3v_3^2 - 432\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 - 432\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 - 54\omega_3^2c_s^2\omega_1^3\omega_2^3v_3^2 - 8\omega_3\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 + 120\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2v_3^2 + 64\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 + 32\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 - 324\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3 + 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 432\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^4\omega_2 + 8\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 + 128\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2 - 27\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2v_1^4\omega_2^3 + 54\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2)\frac{v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^2}$$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 3\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12}^2 - \omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_7^2\omega_8\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + \omega_{14}\omega_8\omega_5^3\omega_{12}^2 + \omega_7\omega_{14}\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8^2\omega_5^3 + \omega_7\omega_8^2\omega_5^3\omega_{12}^2 - 2\omega_7^2\omega_8\omega_5^2\omega_{12}^2 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + \omega_7^2\omega_8^2\omega_5^3\omega_{12} - 2\omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + \omega_7^2\omega_{14}\omega_5^2\omega_{12}^2 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} + \omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2 - 2\omega_7\omega_8\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_5^3\omega_{12}^2 + 2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 5\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 2\omega_7^2\omega_8^2\omega_5^2\omega_{12} - \omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8^2\omega_{12}^2 - 3\omega_7\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - \omega_7^2\omega_8^2\omega_5^3\omega_{12}^2)\frac{c_s^2\rho v_1 v_3}{\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (-3\omega_3\omega_1\omega_2^3v_3^2 - 24\omega_3c_s^2\omega_1\omega_2^2 + 10\omega_3\omega_1^3\omega_2 - 22\omega_3\omega_1^2v_1^2\omega_2 + 10\omega_3v_1^2\omega_2^3 - 20\omega_3\omega_1^2\omega_2^2 - 24\omega_3c_s^2\omega_1\omega_2^3 + 4\omega_1^2\omega_2^2v_3^2 + 2\omega_1\omega_2^3 + 28\omega_3c_s^2\omega_1^3 + 12c_s^2\omega_1^2\omega_2^2 + 14\omega_3\omega_1^2\omega_2 + 26\omega_3c_s^2\omega_2^3 - 4\omega_3\omega_1\omega_2^2v_3^2 - 2\omega_1^3\omega_2v_3^2 - 6c_s^2\omega_1^3\omega_2 - 4\omega_3\omega_1^2\omega_2v_3^2 + 4\omega_3\omega_1^3v_3^2 + 26\omega_3\omega_1^2v_1^2\omega_2^2 + 16\omega_3\omega_1^3v_1^2 - 6c_s^2\omega_1\omega_2^3 - 30\omega_3c_s^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2\omega_2^2v_3^2 - 13\omega_3\omega_1v_1^2\omega_2^3 - 2\omega_1\omega_2^3v_3^2 - 4\omega_3\omega_1v_1^2\omega_2^2 - 13\omega_3\omega_1^3v_1^2\omega_2 + 4\omega_3\omega_2^3v_3^2 - 10\omega_3\omega_2^3 - 3\omega_3\omega_1^3\omega_2v_3^2 + 8\omega_3\omega_1\omega_2^2 - 24\omega_3c_s^2\omega_1^3\omega_2 + 2\omega_1^3\omega_2 - 12\omega_3\omega_1^3 + 10\omega_3\omega_1\omega_2^3 + 48\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_1^2\omega_2^2)\frac{\rho v_1 v_3}{6\omega_3\omega_1^3\omega_2^3}$$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_7\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 5\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 10\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15} + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15} + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 5\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5^3\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 8\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 8\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 8\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 8\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - 8\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15})\frac{c_s^2\rho v_2 v_3}{2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-2\omega_3\omega_4\omega_2 v_3^2 - 6\omega_3\omega_4 c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4 c_s^2\omega_1 - 27\omega_4 c_s^2\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_4\omega_1\omega_2 v_3^2 + 9\omega_3\omega_1\omega_2 v_3^2 - 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_3^2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_2 v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-36 - \omega^3 - 16\omega^2 + 54\omega)\frac{c_s^4\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-6\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 6\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 v_2^2\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{12} + 30\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3 v_2^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14} v_1^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8\omega_5^3 v_2^2\omega_{15}\omega_{12} - 12\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8 v_1^2\omega_5^2\omega_{15}\omega_{12} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_5^3 v_2^2\omega_{15}\omega_{12} + 10\omega_6\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8 v_1^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_5^2 v_2^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{16}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} + 6\omega_6^2\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_5^3 v_2^2\omega_{15}\omega_{12} - 24\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_{15}\omega_{12} - 24\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8 v_1^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} + 36\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_{15} + 24\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8 v_1^2\omega_5\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_{12} + 18\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} + 12\omega_6\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 24\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3 v_2^2\omega_{15}\omega_{12} - 12\omega_6^2\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 12\omega_6^2\omega_{16}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8 v_1^2\omega_5^3\omega_{15}\omega_{12} - 24\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_{12} - 24\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2 v_2^2\omega_{15}\omega_{12} + 6\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8^3\omega_5^3 v_2^2\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12} + 24\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_{15}\omega_{12} - 48\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2 v_2^2\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14} v_1^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 v_2^2\omega_{15}\omega_{12} - 12\omega_6^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8 v_1^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} - 36\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 v_5^2\omega_{15}\omega_{12} - 18\omega_6\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12} - \omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} - 6\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2 v_1^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} + 6\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2 v_1^2\omega_5^3\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_{12} + 12\omega_6\omega_{16}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 v_2^2\omega_{15}\omega_{12} - 24\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5\omega_{15}\omega_{12} + 24\omega_6^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2 v_2^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 v_1^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12} - 12\omega_6^2\omega_7^3 c_s^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 18\omega_6\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12} - 24\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} + 36\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_{15}\omega_{12})\frac{c_s^2\rho}{12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12} - 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} + 6\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12} - 12\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{14}\omega_5^3\omega_{15}\omega_{12} + 12\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8^3\omega_5^3\omega_{12} - 18\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^3\omega_{15}\omega_{12} - 12\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{12} - 18\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8^3\omega_{15}\omega_{12} - 6\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{12} + 6\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_{12} - 12\omega_6\omega_{10}\omega_7\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_5^2\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 10\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 6\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 12\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - \omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_5^2\omega_{15}\omega_{12} - 6\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_{16}\omega_{10}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 24\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12} - 18\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} - 24\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_{15}\omega_{12} - 6\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} +$

$12\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12} + 12\omega_6\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12})\frac{c_s^4\rho}{12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (24\omega_3\omega_1^3\omega_2 - 12\omega_3^2\omega_1^2 + 24\omega_3^2\omega_{13}\omega_1\omega_2 + 12\omega_3^2\omega_1^3 - 6\omega_3\omega_{13}\omega_1^2\omega_2 - 6\omega_3\omega_{13}\omega_1^3 - 12\omega_3\omega_1^2\omega_2 + 12\omega_{13}\omega_1^3 - \omega_3^2\omega_{13}\omega_1^3\omega_2 -$
$2\omega_3^2\omega_{13}\omega_1^3 + 12\omega_3^2\omega_1^2\omega_2 - 24\omega_3^2\omega_{13}\omega_2 + 12\omega_3\omega_{13}\omega_1\omega_2 - 6\omega_3^2\omega_{13}\omega_1^2 + 12\omega_3^2\omega_{13}\omega_1 - 2\omega_3^2\omega_{13}\omega_1^2\omega_2 - 12\omega_3^2\omega_1^3\omega_2 - 12\omega_1^3\omega_2 - 12\omega_3\omega_1^3)\frac{c_s^4\rho}{12\omega_3^2\omega_{13}\omega_1^3\omega_2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2 - 216\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3 + 108\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 +$
$648\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 + 36\omega_3^2\omega_4\omega_1v_1^4\omega_5\omega_2^3 - 108\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1v_1^4\omega_5\omega_2^2 + 72\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2v_1^2\omega_5\omega_2^3 +$
$112\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5 - 54\omega_3^2\omega_1^3v_1^4\omega_5\omega_2^3 - 36\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2 + 36\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 + 240\omega_3^2\omega_4^2c_s^2\omega_5\omega_2^3v_3^2 -$
$12\omega_3\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 - 108\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_5\omega_2^3 - 72\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 + 288\omega_3^2\omega_4c_s^2\omega_1\omega_5\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 +$
$9\omega_3\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^3 + 27\omega_3^2\omega_4c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 - 180\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3v_3^2 - 162\omega_3^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 + 132\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2v_3^2 - 48\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2v_3^2 +$
$264\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5 + 64\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^3 - 6\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 - 216\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 + 54\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 + 108\omega_3^2\omega_4^2\omega_1v_1^4\omega_5\omega_2^3 +$
$336\omega_3\omega_4^2c_s^2\omega_1\omega_5\omega_2^3v_3^2 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 - 108\omega_3^2\omega_1^2v_1^2\omega_5\omega_2^3 - 108\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_3^2 - 108\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 -$
$36\omega_3^2\omega_4\omega_1v_1^2\omega_5\omega_2^3 - 4\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 + 108\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 - 96\omega_3^2\omega_4^2v_1^4\omega_5\omega_2^3 + 54\omega_3^2\omega_1^3v_1^2\omega_5\omega_2^3 + 36\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 72\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3 -$
$24\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^2 + 72\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 - 72\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 + 360\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2v_3^2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 + 12\omega_3\omega_4^2\omega_1v_1^4\omega_5\omega_2^3 -$
$16\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 - 28\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 + 324\omega_3^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 - 180\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2v_3^2 - 9\omega_3^2\omega_4\omega_1^3\omega_5v_2^2\omega_2^3 - 162\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 +$
$162\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2v_3^2 + 180\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 + 288\omega_3^2\omega_4c_s^4\omega_1^2\omega_5\omega_2^3 - 6\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 + 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 +$
$48\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2v_3^2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 - 2\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 + 300\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^3 + 288\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 +$
$108\omega_3^2\omega_1^2v_1^4\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 160\omega_3\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 - 54\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 + 72\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 216\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 -$
$36\omega_3\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 32\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5 - 36\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^2 + 64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2 + 72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 - 9\omega_3\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^3 -$
$180\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 - 36\omega_3^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^2 - 648\omega_3^2\omega_4c_s^2\omega_1\omega_5\omega_2^3v_3^2 - 216\omega_3^2\omega_4^2c_s^2v_1^2\omega_5\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2 - 144\omega_3^2\omega_4\omega_1^2v_1^4\omega_5\omega_2^3 -$
$2\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2\omega_5\omega_2^3v_3^2 - 112\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 - 27\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 - 288\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 18\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 +$
$60\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 - 288\omega_3^2\omega_4c_s^4\omega_1\omega_5\omega_2^3 - 72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 - 468\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 - 18\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 - 12\omega_3\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 +$
$144\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5v_3^2 - 108\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_5\omega_2^2 + 152\omega_3^2\omega_4^2c_s^4\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2v_3^2 - 168\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2v_3^2 - 54\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 +$
$180\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_1^4\omega_5\omega_2^2 + 216\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5 + 24\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 -$
$36\omega_3\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 36\omega_3^2\omega_4\omega_1^2v_1^4\omega_5\omega_2^2 - 56\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2v_3^2 - 24\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2 -$
$54\omega_3^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2v_3^2 + 36\omega_3\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5 + 9\omega_3^2\omega_4\omega_1^3\omega_5v_2^4\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^3 -$
$72\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 108\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 + 4\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 + 162\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 - 84\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 48\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^2 +$
$16\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 - 96\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2v_3^2 + 144\omega_3\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 - 348\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2 + 132\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 +$
$4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3v_1^4\omega_5\omega_2^2 - 72\omega_3^2\omega_4c_s^4\omega_1^3\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^2 - 60\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 288\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3 +$
$18\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 + 108\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 + 54\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 + 216\omega_3^2\omega_4^2v_1^2\omega_5\omega_2^3v_3^2 - 6\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3 - 88\omega_3^2\omega_4^2c_s^2\omega_5\omega_2^3 +$
$12\omega_3\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^2 + 36\omega_3\omega_4\omega_1^2v_1^4\omega_5\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2 + 160\omega_3\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 - 120\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3v_3^2 + 24\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3v_3^2 +$
$36\omega_3\omega_4\omega_1^3v_1^2\omega_5\omega_2^2 + 54\omega_3^2\omega_4\omega_1^3v_1^4\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 - 72\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^2 + 264\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2v_3^2)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2v_2^2\omega_{15}^2 -$
$3\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - \omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2v_2^2\omega_{15} - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 -$
$9\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} + 3\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 -$
$\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15} - 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_5^2\omega_{15}^2 -$
$3\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2 - 3\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 - 3\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2v_2^2\omega_{15}^2 +$
$3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 6\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$3\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2v_2^2\omega_{15}^2 -$
$3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15} - 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8v_2^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - \omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 +$
$6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2v_2^2\omega_{15}^2 +$
$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 +$
$3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$3\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5v_2^2 + 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2 + 2\omega_{16}^2\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15}^2 -$
$3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + \omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_8\omega_5^2v_2^2\omega_{15} -$
$2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 3\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2v_2^2\omega_{15}^2 - 3\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 +$
$2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7\omega_5^2v_2^2\omega_{15}^2 - 6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_5^2\omega_{15}^2 +$

$$2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_5\omega_{15}^2 +$$
$$3\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5v_2^2\omega_{15}^2 - 2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$$
$$2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2 -$$
$$\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} +$$
$$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5v_2^2\omega_{15} - \omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 - 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5v_2^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 -$$
$$2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$$
$$2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}\omega_{10}^3c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2)\frac{v_1v_2v_3}{\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,\rho}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,\rho} = 0$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,\rho} = 0$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,\rho} = 0$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,\rho} = (-3\omega_1^3v_1^2\omega_2 - 12\omega_1\omega_2^2 - 72c_s^2\omega_1^2\omega_2 + 6\omega_1^2\omega_2^2v_3^2 + 6\omega_1\omega_2^3 - 3\omega_1v_1^2\omega_2^3 - 4v_2^2\omega_2^3 + 36c_s^2\omega_1^2\omega_2^2 + 4\omega_1^3v_1^2 - 12\omega_1^2v_2^2\omega_2 - 3\omega_1^3\omega_2v_3^2 +$$
$$2\omega_2^3v_3^2 - 18c_s^2\omega_1^3\omega_2 - 18c_s^2\omega_1\omega_2^3 + 24\omega_1^2\omega_2 + 36c_s^2\omega_1\omega_2^2 - 3\omega_1\omega_2^3v_3^2 - 6\omega_1^2v_1^2\omega_2 + 4\omega_1^3v_3^2 + 4\omega_1^3v_2^2 - 12\omega_1^3 + 6\omega_1^3\omega_2 - 6\omega_1^2\omega_2v_3^2 + 6\omega_1^2v_1^2\omega_2^2 +$$
$$12\omega_1v_2^2\omega_2^2 + 36c_s^2\omega_1^3 + 2v_1^2\omega_2^3 - 12\omega_1^2\omega_2^3)\frac{v_1v_2v_3}{6\omega_1^3\omega_2^3}$$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_1} = 0$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_1} = (2\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2 - 6\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 8\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$$
$$\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 11\omega_6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15} -$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$2\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15} - \omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 6\omega_6\omega_{16}^2\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{8}\omega_5^2\omega_{15}^2 +$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15}^2 + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$$
$$2\omega_6\omega_{16}\omega_{10}^3\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_8^2\omega_5^3v_2^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 9\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3v_2^2\omega_{15}^2 + 6\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$$
$$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2 - 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 -$$
$$2\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_8^2\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 -$$
$$3\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3 + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 -$$
$$2\omega_6\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 8\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} -$$
$$6\omega_6\omega_{16}\omega_{10}^3c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^3c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + \omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 +$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - 8\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{8}\omega_5^2v_2^2\omega_{15}^2 + 2\omega_6\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_8^2\omega_5^3v_2^2\omega_{15}^2 -$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15} - 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2 -$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 5\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15}^2 +$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 3\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 +$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3v_2^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2v_2^2\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3v_2^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 +$$
$$15\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 3\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 -$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 15\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$$
$$2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 11\omega_6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2 -$$
$$3\omega_6\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 13\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 -$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_8\omega_5^3\omega_{15}^2 - 6\omega_6\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 -$$
$$2\omega_6\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15} - 6\omega_6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 +$$
$$2\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_8^2\omega_5^3v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$12\omega_6\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 9\omega_6\omega_{16}\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 9\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 +$$
$$4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 8\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15}^2 -$$
$$4\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 3\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 6\omega_6\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 -$$
$$5\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^3v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} +$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^3\omega_{15}^2 -$$
$$2\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 +$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^3v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_8\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_6\omega_{16}^3\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7c_s^2\omega_{17}\omega_5^3\omega_{15}^2 + 6\omega_6\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_{10}^3c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2v_2^2\omega_{15}^2 - 2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2 -$$
$$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3v_2^2\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3v_2 + 8\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 -$$
$$4\omega_6\omega_{16}\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15}^2)\frac{\rho v_2v_3}{2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D_x D_y^2 D_z}\, v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^2 D_z}\, v_1}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D_x D_y^2 D_z}\, v_1} = 0$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D_x D_y^2 D_z}\, v_1} = 0$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D_x D_y^2 D_z}\, v_1} = 0$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D_x D_y^2 D_z}\, v_1} = (-24\omega_3\omega_4^2\omega_1^3\omega_2 v_3^2 + 48\omega_3^2\omega_4^2\omega_1^3 v_3^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2\omega_1^2 v_2^2\omega_2^3 + 144\omega_3\omega_4^2\omega_1^2\omega_2^3 v_3^2 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2 +$$
$$324\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^3 + 180\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^2 + 63\omega_3^2\omega_4\omega_1^3\omega_2^3 v_3^2 - 72\omega_4^2\omega_1^2 v_2^2\omega_2^3 - 108\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3 v_2^2 + 324\omega_4^2 c_s^2\omega_1^3\omega_2^3 - 120\omega_3^2\omega_4^2 c_s^2\omega_2^3 +$$
$$96\omega_3^2\omega_4^2\omega_1^2\omega_2 - 144\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^2 - 144\omega_3\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3\omega_2 v_3^2 - 48\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2 - 216\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 72\omega_4^2\omega_1^3\omega_2^2 - 360\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2 -$$
$$36\omega_3^2\omega_4\omega_1 v_2^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 v_3^2 - 60\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 + 336\omega_3^2\omega_4^2 c_s^2\omega_1^3 + 72\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2^2 - 72\omega_4^2\omega_1^2\omega_2^3 v_3^2 + 108\omega_3^2\omega_4 c_s^2\omega_1\omega_2^3 -$$
$$432\omega_4^2 c_s^2\omega_1^2\omega_2^3 + 60\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2^2 - 108\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2 - 36\omega_3^2\omega_4\omega_1^3\omega_2^2 v_3^2 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 60\omega_3\omega_4^2\omega_1^2\omega_2^2 v_3^2 + 108\omega_3^2\omega_1^2\omega_2^3 v_3^2 - 189\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^3 -$$
$$36\omega_3^2\omega_4\omega_1\omega_2^3 + 36\omega_3\omega_4\omega_1^3 v_2^2\omega_2^2 + 72\omega_3^2\omega_4^2 v_1^2\omega_2^3 - 36\omega_3\omega_4^2\omega_1^2 v_2^2\omega_2^3 - 72\omega_3\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^2 - 144\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2 - 108\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^3 -$$
$$36\omega_3^2\omega_4\omega_1^3 v_2^2\omega_2^2 + 72\omega_3^2\omega_4\omega_1\omega_2^3 v_3^2 - 108\omega_3\omega_4\omega_1^3 v_2^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3\omega_2^3 + 12\omega_3\omega_4^2\omega_1^2 v_2^2\omega_2^2 + 324\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 +$$
$$36\omega_3\omega_4\omega_1^3\omega_2^2 v_3^2 + 24\omega_3^2\omega_4^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^3 v_2^2\omega_2 + 24\omega_3^2\omega_4^2\omega_1^2\omega_2 v_3^2 + 216\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^2 + 216\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1 v_2^2\omega_2^2 - 36\omega_4^2\omega_1^3 v_2^2\omega_2^2 -$$
$$36\omega_3\omega_4\omega_1^2\omega_2^3 v_3^2 + 12\omega_3\omega_4^2\omega_1 v_2^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3^2\omega_4^2 v_2^2\omega_2^3 + 432\omega_3\omega_4 c_s^2\omega_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1 v_2^2\omega_2^3 -$$
$$180\omega_3^2\omega_4\omega_1^2\omega_2^3 v_3^2 + 54\omega_4^2\omega_1^3 v_2^2\omega_2^3 - 432\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 v_3^2 - 36\omega_4^2\omega_1^3\omega_2^2 v_3^2 + 144\omega_3^2\omega_4\omega_1^2\omega_2^3 + 54\omega_3^2\omega_1^3 v_2^2\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3 v_2^2\omega_2 +$$
$$24\omega_3^2\omega_4^2\omega_1\omega_2^2 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 - 63\omega_3\omega_4^2\omega_1^3\omega_2^3 v_3^2 - 96\omega_3^2\omega_4^2\omega_2^3 v_3^2 - 24\omega_3\omega_4^2\omega_1\omega_2^3 v_3^2 + 36\omega_3\omega_4^2\omega_1^3 v_2^2\omega_2^2 + 72\omega_3^2\omega_4\omega_1^3\omega_2^2 + 180\omega_3\omega_4\omega_1^2 v_2^2\omega_2^3 +$$
$$48\omega_3\omega_4^2\omega_1^2\omega_2^2 - 324\omega_3\omega_4 c_s^2\omega_1^3\omega_2^3 - 216\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^2 + 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 v_3^2 + 36\omega_3^2\omega_4\omega_1^2 v_2^2\omega_2^2 + 180\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^3 + 48\omega_3\omega_4^2\omega_1^3\omega_2 - 144\omega_3^2\omega_4^2\omega_1^3 +$$
$$216\omega_3\omega_4 c_s^2\omega_1^3\omega_2^2 - 54\omega_3^2\omega_1^3\omega_2^3 v_3^2 + 72\omega_3\omega_4^2\omega_1^3\omega_2^2 v_3^2 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3\omega_4^2 c_s^2\omega_1\omega_2^3 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 + 54\omega_4^2\omega_1^3\omega_2^3 v_3^2 + 36\omega_3^2\omega_4\omega_1^2 v_2^2\omega_2^3 +$$
$$108\omega_3^2\omega_4^2\omega_1\omega_2^3 v_3^2 - 72\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2\omega_2^2 v_3^2 - 216\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2 + 144\omega_3^2\omega_4^2\omega_1^3 v_1^2 + 189\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^3)\frac{\rho v_2 v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(2)}_{\mathrm{D_x D_y^2 D_z}\, v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1 \partial x_2^2 \partial x_3}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D_x D_y^2 D_z}\, v_2} = 0$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^2 D_z}\, v_2} = (\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2 v_2^2\omega_{15}^2 -$$
$$\omega_{16}^2\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 3\omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2 v_2^2\omega_{15} - \omega_{16}^2\omega_{10}^2\omega_{17}\omega_5^2\omega_{15}^2 -$$
$$3\omega_{16}^2\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} + \omega_{16}\omega_{10}^3\omega_7 c_s^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2 v_2^2\omega_{15}^2 + 3\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 v_2^2\omega_{15}^2 -$$
$$\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_5^2\omega_{15}^2 -$$
$$\omega_{16}\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$\omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}\omega_{10}^3\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2 v_2^2\omega_{15}^2 -$$
$$6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 - \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2 v_2^2\omega_{15}^2 -$$
$$\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8\omega_{15} - \omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 v_2^2\omega_{15}^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15} - \omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 +$$
$$2\omega_{16}^2\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_{16}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2 v_2^2\omega_{15}^2 +$$
$$3\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 v_2^2\omega_{15}^2 + \omega_{16}^2\omega_{10}\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 +$$
$$\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_8\omega_5\omega_{15} + 3\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 - 3\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5 v_2^2\omega_{15}^2 + \omega_{16}^2\omega_{10}\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 v_2^2 + 6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 v_2^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$3\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15} + \omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5 v_2^2\omega_{15} +$$
$$\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8 v_2^2\omega_{15} + 3\omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2 v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2 v_2^2\omega_{15} -$$
$$2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}\omega_{10}^3\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$3\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5 v_2^2\omega_{15}^2 - 3\omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2 v_2^2\omega_{15}^2 - \omega_{16}\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 +$$
$$2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7\omega_5^2 v_2^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7 c_s^2\omega_5^2\omega_{15}^2 +$$
$$6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + 3\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_5\omega_{15}^2 +$$
$$\omega_{16}\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5 v_2^2\omega_{15}^2 - 2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} -$$
$$2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2 v_2^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2 -$$
$$3\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 - 3\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7 c_s^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} +$$
$$3\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5 v_2^2\omega_{15} - 3\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5 v_2^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 9\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 -$$
$$6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 v_2^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$$
$$6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 v_2^2\omega_{15} + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2)\frac{\rho v_1 v_3}{\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D_x D_y^2 D_z}\, v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^2 D_z}\, v_2}$$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} =$
$(-2\omega_3\omega_4\omega_1^2\omega_2^2 - 3\omega_3^2\omega_1 v_1^2\omega_2^3 - 12\omega_3^2\omega_4\omega_1^3 + 6\omega_3\omega_1^2\omega_2^3 - 3\omega_3\omega_4\omega_1^2 v_1^2\omega_2^3 + 4\omega_3^2\omega_4\omega_2^3 v_3^2 + 3\omega_3^2\omega_1^2\omega_2^2 v_3^2 + 6\omega_3^2\omega_4\omega_1^2 v_1^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1 v_2^2\omega_2^2 -$
$4\omega_3^2\omega_4\omega_1^2\omega_2 v_3^2 + 3\omega_3\omega_1^3\omega_2^2 v_3^2 + \omega_3\omega_4\omega_1^2 v_1^2\omega_2^2 - 18\omega_3^2 c_s^2\omega_1^3\omega_2^2 + 6\omega_3\omega_4\omega_1^2\omega_2^3 + 4\omega_3\omega_4\omega_1^3\omega_2 + 6\omega_3^2\omega_1\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^2 v_3^2 - 3\omega_4\omega_1^3\omega_2^2 v_3^2 + 4\omega_3^2\omega_4\omega_1^3 v_1^2 -$
$18\omega_3^2\omega_4 c_s^2\omega_1\omega_2^3 + 3\omega_4\omega_1^2 v_1^2\omega_2^3 - 3\omega_3\omega_1^2 v_1^2\omega_2^3 - 3\omega_3^2\omega_1^3 v_1^2\omega_2^2 + 18\omega_3^2 c_s^2\omega_1^2\omega_2^3 + 3\omega_3^2\omega_1^2\omega_2^3 v_3^2 + 6\omega_3^2\omega_4\omega_1\omega_2^3 - 12\omega_3^2\omega_4 v_2^2\omega_2^3 + \omega_3\omega_4\omega_1\omega_2^3 v_3^2 - 6\omega_3\omega_4\omega_1^3\omega_2^2 -$
$4\omega_3^2\omega_4\omega_1^2 v_1^2\omega_2 - 4\omega_3^2\omega_4\omega_2^3 - 12\omega_3^2\omega_4 c_s^2\omega_1\omega_2^2 - 3\omega_3^2\omega_4\omega_1\omega_2^3 v_3^2 - 6\omega_3\omega_1^3\omega_2^2 + 6\omega_3\omega_4 c_s^2\omega_1\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^2 + 3\omega_3\omega_4\omega_1^3\omega_2^2 v_3^2 + 18\omega_3^2 c_s^2\omega_1^2\omega_2^2 +$
$36\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^2 - 6\omega_4\omega_1^2\omega_2^3 + 28\omega_3^2\omega_4 c_s^2\omega_1^3 - 3\omega_3\omega_4\omega_1^2\omega_2^3 v_3^2 + 4\omega_3^2\omega_4 v_1^2\omega_2^3 - 12\omega_3\omega_4 c_s^2\omega_1^3\omega_2 - 18\omega_3\omega_4 c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_4\omega_1^3 v_1^2\omega_2^2 - 3\omega_3^2\omega_1\omega_2^2 v_3^3 -$
$2\omega_3\omega_4\omega_1^3\omega_2 v_3^2 - 12\omega_3^2\omega_4\omega_1^2\omega_2^2 - 18\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2 - 3\omega_3^2\omega_4\omega_1^3\omega_2 v_3^2 - 18\omega_4 c_s^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4\omega_1^2 v_2^2\omega_2 + 6\omega_3^2\omega_4\omega_1^3\omega_2 - 18\omega_3^2 c_s^2\omega_1\omega_2^3 - 3\omega_3^2\omega_1^3\omega_2^2 v_3^2 +$
$6\omega_3\omega_4 c_s^2\omega_1^2\omega_2^2 + 18\omega_3 c_s^2\omega_1^3\omega_2^2 + 6\omega_3^2\omega_1^3\omega_2^2 + \omega_3\omega_4\omega_1 v_1^2\omega_2^3 + 3\omega_3^2\omega_1^2 v_1^2\omega_2^3 - 18\omega_3 c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_1^3 v_1^2\omega_2^2 - 6\omega_3^2\omega_1^2\omega_2^3 + \omega_3\omega_4\omega_1^2\omega_2^2 v_3^2 - 3\omega_3\omega_1^2\omega_2^3 v_3^2 +$
$4\omega_3^2\omega_4\omega_1^3 v_3^2 - 2\omega_3\omega_4\omega_1\omega_2^3 + 12\omega_3^2\omega_4\omega_1^3 v_2^2 - 3\omega_3^2\omega_4\omega_1^3 v_1^2\omega_2 + 3\omega_4\omega_1^2\omega_2^3 v_3^2 - 3\omega_4\omega_1^3 v_1^2\omega_2^2 + 18\omega_4 c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1 v_1^2\omega_2^2 + 18\omega_3\omega_4 c_s^2\omega_1^3\omega_2^2 -$
$2\omega_3\omega_4\omega_1^3 v_1^2\omega_2 + 3\omega_3^2\omega_1^2 v_1^2\omega_2^2 - 6\omega_3^2\omega_1^2\omega_2^2 + 20\omega_3^2\omega_4 c_s^2\omega_2^3 + 20\omega_3^2\omega_4\omega_1^2\omega_2 - 3\omega_3^2\omega_4\omega_1 v_1^2\omega_2^3 + 6\omega_3^2\omega_4\omega_1^2\omega_2^2 v_3^2 + 6\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2)\frac{\rho v_1 v_3}{6\omega_3^2\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1 \partial x_2^2 \partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (-2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 8\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 6\omega_6\omega_{16}^2\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$15\omega_6\omega_{16}^2\omega_{10}^3\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} + 8\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15} - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5 v_2^2\omega_{15}^2 -$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_{15} - 2\omega_{16}^2\omega_{10}^3\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 v_2^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 v_2^2\omega_{15}^2 - 2\omega_6\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{15} + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2 v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5 v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5^2\omega_{15}^2 +$
$9\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3 c_s^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 -$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 - 9\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{10}^2\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2 v_2^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 +$
$\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 6\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_{15} + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_8^2\omega_5\omega_{15} + 2\omega_6\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 8\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8\omega_5^2 v_2^2\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$15\omega_6\omega_{16}^2\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5 v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2 + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 -$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^3 c_s^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2 v_2^2\omega_{15} +$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$11\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5 v_2^2\omega_{15} -$
$2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^3\omega_7 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 -$
$2\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 v_2^2 + 6\omega_6\omega_{16}^2\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 + 6\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_{15}^2 - 13\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5^2\omega_{15}^2 - 3\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 +$
$3\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5^2 v_2^2\omega_{15}^2 - 3\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_5\omega_{15}^2 + 9\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^3\omega_7 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$
$3\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 v_2^2\omega_{15} - \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_{15}^2 -$
$\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2 - 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_8\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 -$
$5\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 - 6\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5 v_2^2\omega_{15}^2 -$
$2\omega_6\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5 v_2^2\omega_{15}^2 -$
$8\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 3\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_8\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2 v_2^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 8\omega_6\omega_{16}^2\omega_{10}^3 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2 v_2^2\omega_{15}^2 +$
$4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15}^2 - 11\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15} + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$4\omega_6\omega_{16}\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 5\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2)\frac{\rho v_1 v_2}{2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (144\omega_3^2\omega_4^2\omega_1^3v_3^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2\omega_1^2v_2^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 72\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^2 +$
$324\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 180\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 - 72\omega_4^2\omega_1^2v_2^2\omega_2^3 - 108\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^2 + 324\omega_4^2c_s^2\omega_1^3\omega_2^3 - 120\omega_3^2\omega_4^2c_s^2\omega_2^3 +$
$96\omega_3^2\omega_4^2\omega_1^2\omega_2 - 63\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^3 - 144\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 144\omega_3\omega_4\omega_1^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 - 48\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 216\omega_4^2c_s^2\omega_1^3\omega_2^2 + 72\omega_4^2\omega_1^3\omega_2^2 -$
$360\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 - 36\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 - 60\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 + 20\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 180\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 + 336\omega_3^2\omega_4^2c_s^2\omega_1^3 + 72\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 +$
$108\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 - 432\omega_4^2c_s^2\omega_1^2\omega_2^3 - 36\omega_4^2\omega_1^3v_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 + 60\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 - 72\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 189\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 -$
$36\omega_3^2\omega_4\omega_1\omega_2^3 - 24\omega_3\omega_4^2\omega_1v_1^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 - 96\omega_3^2\omega_4^2v_1^2\omega_2^3 - 36\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^3 - 72\omega_3\omega_4\omega_1^3\omega_2^2 + 216\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 - 144\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 +$
$54\omega_4^2\omega_1^3v_1^2\omega_2^2 + 108\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 - 108\omega_3\omega_4\omega_1^3v_2^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3\omega_2^2 + 12\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^2 + 324\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 +$
$144\omega_3^2\omega_4^2\omega_1^3\omega_2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_1^2\omega_2 - 54\omega_3^2\omega_1^3v_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 216\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 63\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^3 +$
$216\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 36\omega_4^2\omega_1^3v_2^2\omega_2^2 + 12\omega_3\omega_4^2\omega_1v_2^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^3 + 48\omega_3^2\omega_4^2v_2^2\omega_2^3 +$
$432\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 54\omega_4^2\omega_1^3v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 - 432\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 -$
$20\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 144\omega_3^2\omega_4\omega_1^2\omega_2^3 + 54\omega_3^2\omega_1^3v_2^2\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_2^2\omega_2 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 - 60\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^2 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3^2\omega_4^2\omega_2^3v_3^2 +$
$36\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2 + 72\omega_3^2\omega_4\omega_1^3\omega_2^2 + 180\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 + 48\omega_3\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2\omega_1^2v_1^2\omega_2^3 - 324\omega_3\omega_4c_s^2\omega_1^3\omega_2^3 - 216\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 +$
$180\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 - 72\omega_4^2\omega_1^2v_1^2\omega_2^3 + 48\omega_3\omega_4^2\omega_1^3\omega_2 - 144\omega_3^2\omega_4^2\omega_1^3 + 216\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 +$
$72\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 - 72\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^2 + 189\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3)\frac{\rho v_1v_2}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^3\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (72\omega_{16}^2\omega_{10}\omega_7c_s^2v_2^2 - 32\omega_{16}\omega_{10}^2\omega_7^2v_2^2 + 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2 - 51\omega_{16}\omega_{10}^3\omega_7^2c_s^2v_2^2 - 8\omega_{16}^2\omega_{10}^2v_2^2 - 8\omega_{16}\omega_{10}^3\omega_7c_s^2 - 8\omega_{16}^2\omega_7^2c_s^2 -$
$4\omega_{10}^3\omega_7v_2^4 + 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4 - 4\omega_{16}\omega_{10}^3c_s^4 - 20\omega_{16}\omega_{10}\omega_7^2v_2^4 - 4\omega_{10}^2\omega_7^2c_s^4 + 8\omega_{16}^2\omega_{10}^2\omega_7c_s^2 + 24\omega_{10}^3\omega_7^2c_s^2v_2^2 - 4\omega_{10}^3\omega_7^2v_2^2 - 16\omega_{16}\omega_{10}^2\omega_7v_2^4 -$
$4\omega_{16}\omega_{10}^3\omega_7^2c_s^4 + 4\omega_{16}^2\omega_{10}\omega_7c_s^4 - 4\omega_{10}^2\omega_7^2v_2^4 - 4\omega_{16}\omega_{10}\omega_7^2c_s^4 - 24\omega_{10}^2\omega_7^2c_s^2v_2^2 - 4\omega_{10}^3\omega_7c_s^4 - 8\omega_{16}\omega_{10}^3v_2^4 + 13\omega_{16}^2\omega_{10}^2\omega_7^2v_2^4 - 4\omega_{16}^2\omega_{10}^2c_s^2 -$
$36\omega_{16}\omega_{10}^3c_s^2v_2^2 + 36\omega_{16}^2\omega_{10}\omega_7^2v_2^2 + 51\omega_{16}^2\omega_{10}\omega_7^2c_s^2v_2^2 - 24\omega_{16}^2\omega_7^2v_2^2 - 20\omega_{16}\omega_{10}^3\omega_7v_2^2 - 8\omega_{16}\omega_{10}^2\omega_7^2c_s^2 - 13\omega_{16}\omega_{10}^3\omega_7^2v_2^4 + 20\omega_{16}^2\omega_{10}\omega_7v_2^4 +$
$120\omega_{16}\omega_{10}^2\omega_7^2c_s^2v_2^2 + 20\omega_{16}^2\omega_{10}^2\omega_7v_2^2 - 4\omega_{10}^3\omega_7^2c_s^2 + 36\omega_{16}^2\omega_{10}^2c_s^2v_2^2 + 4\omega_{16}^2\omega_{10}^2c_s^4 - 36\omega_{16}^2\omega_{10}\omega_7^2v_2^4 + 20\omega_{16}\omega_{10}^3\omega_7v_2^4 + 24\omega_{16}^2\omega_7^2v_2^4 +$
$8\omega_{16}\omega_{10}^2\omega_7^2c_s^4 + 4\omega_{16}\omega_{10}\omega_7^2c_s^2 + 4\omega_{10}^2\omega_7^2v_2^2 - 84\omega_{16}^2\omega_{10}^2\omega_7c_s^2v_2^2 + 4\omega_{10}^3\omega_7c_s^2 + 8\omega_{16}\omega_{10}^3v_2^2 - 13\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2 - 20\omega_{16}^2\omega_{10}^2\omega_7v_2^4 -$
$48\omega_{16}\omega_{10}^2\omega_7c_s^2v_2^2 + 4\omega_{10}^3\omega_7^2c_s^4 + 13\omega_{16}\omega_{10}^3\omega_7^2v_2^2 - 20\omega_{16}^2\omega_{10}\omega_7v_2^2 + 4\omega_{10}^3\omega_7v_2^2 - 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 + 96\omega_{16}^2\omega_7^2c_s^2v_2^2 + 84\omega_{16}\omega_{10}^3\omega_7c_s^2v_2^2 +$
$4\omega_{16}\omega_{10}^3c_s^2 + 4\omega_{10}^2\omega_7^2c_s^2 + 20\omega_{16}\omega_{10}\omega_7^2v_2^2 - 144\omega_{16}^2\omega_{10}\omega_7^2c_s^2v_2^2 + 32\omega_{16}\omega_{10}^2\omega_7^2v_2^4 - 12\omega_{16}^2\omega_{10}\omega_7^2c_s^4 + 8\omega_{16}^2\omega_{10}^2v_2^4 + 8\omega_{16}^2\omega_7^2c_s^4 + 8\omega_{16}\omega_{10}^3\omega_7c_s^4 +$
$16\omega_{16}\omega_{10}^2\omega_7v_2^2 + 4\omega_{16}\omega_{10}^3\omega_7^2c_s^2 - 24\omega_{10}^3\omega_7c_s^2v_2^2 - 4\omega_{16}^2\omega_{10}\omega_7c_s^2 - 8\omega_{16}^2\omega_{10}^2\omega_7c_s^4 + 4\omega_{10}^3\omega_7^2v_2^4 - 72\omega_{16}\omega_{10}\omega_7^2c_s^2v_2^2)\frac{v_3}{4\omega_{16}^2\omega_{10}^3\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (8\omega_3^2\omega_1\omega_2^2 + 24\omega_3^2\omega_1^2v_2^2\omega_2^3 + 24\omega_3^2\omega_1v_2^2\omega_2^2v_3^2 - 4\omega_3c_s^2\omega_1^2\omega_2^2v_3^2 + 40\omega_3^2c_s^2\omega_1^2\omega_2 + 4\omega_3^2\omega_1^2\omega_2^2v_3^2 - 84\omega_3^2c_s^4\omega_1^3\omega_2 - 48\omega_3^2\omega_1^3v_2^2\omega_2v_3^2 -$
$6\omega_3^2c_s^4\omega_1^2\omega_2^3 + 12c_s^2\omega_1^3\omega_2^2 + 12c_s^2\omega_1^2\omega_2^3v_3^2 + 216\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 + 24\omega_3^2v_2^2\omega_2^3 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 + 36c_s^4\omega_1^2\omega_2^3 - 8\omega_3c_s^2\omega_1\omega_2^3 + 16\omega_3^2c_s^2\omega_1^3v_3^2 + 8\omega_3^2\omega_1\omega_2^3 -$
$24\omega_3^2\omega_1^2v_2^2\omega_2^2 + 216\omega_3^2c_s^2\omega_1^3v_2^2 - 72\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2c_s^4\omega_2^3 + 4\omega_3^2\omega_1^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 - 2\omega_3^2c_s^2\omega_1^2\omega_2^2v_3^2 - 72\omega_3^2\omega_1v_2^4\omega_2^2 - 36\omega_3^2c_s^4\omega_1^2\omega_2 -$
$36\omega_3^2\omega_1^3v_2^4\omega_2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 + \omega_3^2\omega_1^2\omega_2^3v_3^2 + 72\omega_3^2c_s^4\omega_1^3 + 56\omega_3^2c_s^2\omega_1^3\omega_2 - 18\omega_3c_s^2\omega_1^2\omega_2^3v_3^2 - 8\omega_3^2\omega_2^3 - 36c_s^4\omega_1^3\omega_2^2 - 24\omega_3^2\omega_1^2v_2^2\omega_2 +$
$96\omega_3^2\omega_1v_2^2\omega_2^3v_3^2 - 4\omega_3c_s^2\omega_1^3\omega_2v_3^2 + 4\omega_3^2\omega_1^3\omega_2v_3^2 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 - 2\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 36\omega_3^2\omega_1v_2^4\omega_2^3 - 20\omega_3^2c_s^2\omega_1^3\omega_2v_3^2 - 12c_s^2\omega_1^2\omega_2^3 +$
$8\omega_3^2\omega_2^3v_3^2 + 24\omega_3^2\omega_1^3v_2^4 + 24\omega_3^2\omega_1^2v_2^2\omega_2v_3^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 - 72\omega_3^2v_2^2\omega_2^3v_3^2 + 48\omega_3^2v_2^4\omega_2^3 + 2\omega_3^2c_s^2\omega_1^3\omega_2^2v_3^2 - 12\omega_3c_s^4\omega_1^3\omega_2 + 72\omega_3^2\omega_1^2v_2^4\omega_2^2 -$
$54\omega_3c_s^4\omega_1^2\omega_2^3 + 24\omega_3^2\omega_1^3v_2^2v_3^2 - 4\omega_3^2\omega_1^2\omega_2 + 20\omega_3^2c_s^2\omega_2^3 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 8\omega_3^2\omega_1\omega_2^3v_3^2 - 24\omega_3^2\omega_1^3v_2^2\omega_2^2 + 8\omega_3c_s^2\omega_1\omega_2^3v_3^2 - 48\omega_3^2\omega_1^2v_2^2\omega_2^2v_3^2 -$
$12\omega_3c_s^4\omega_1^2\omega_2^2 + 22\omega_3^2c_s^2\omega_1\omega_2^3v_3^2 + 72\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^2 - 48\omega_3^2\omega_1^3v_2^2 - 4\omega_3^2\omega_1^3v_3^2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - \omega_3^2\omega_1^3\omega_2^2v_3^2 + 18\omega_3c_s^2\omega_1^3\omega_2^2v_3^2 - 18\omega_3c_s^2\omega_1^3\omega_2^2 +$
$\omega_3^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_1\omega_2^2v_3^2 - 24\omega_3^2\omega_1^2v_2^2\omega_2^3v_3^2 + 18\omega_3c_s^2\omega_1^2\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 + 4\omega_3c_s^2\omega_1^3\omega_2 - 60\omega_3^2\omega_1v_2^2\omega_2^3 - 216\omega_3^2c_s^2\omega_1v_2^2\omega_2^2 -$
$4\omega_3^2c_s^2\omega_1^2\omega_2v_3^2 - 324\omega_3^2c_s^2\omega_1^3v_2^2\omega_2 + 48\omega_3^2\omega_1v_2^2\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 + 4\omega_3c_s^2\omega_1^2\omega_2^2 + 4\omega_3^2\omega_1^2\omega_2v_3^2 + 84\omega_3^2\omega_1^3v_2^2\omega_2 - 20\omega_3^2c_s^2\omega_2^3v_3^2 + 42\omega_3^2c_s^4\omega_1\omega_2^3 -$
$12c_s^2\omega_1^3\omega_2^2v_3^2 + 24\omega_3^2\omega_1^3v_2^2\omega_2^2v_3^2 + 8\omega_3^2c_s^2\omega_1\omega_2^2v_3^2 - 52\omega_3^2c_s^2\omega_1^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2 + 108\omega_3^2c_s^2\omega_1v_2^2\omega_2^3)\frac{v_3}{36\omega_3^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = (104\omega_{16}\omega_{10}^2\omega_7^2v_2^2 - 72\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 24\omega_{16}\omega_{10}\omega_7^2 + 28\omega_{16}^2\omega_{10}^2v_2^2 + 44\omega_{16}\omega_{10}^3\omega_7c_s^2 + 48\omega_{16}^2\omega_7^2c_s^2 + 8\omega_{10}^3\omega_7 - 17\omega_{16}^2\omega_{10}^2\omega_7^2 + 12\omega_{16}\omega_{10}^3 - 44\omega_{16}^2\omega_{10}^2\omega_7c_s^2 + 8\omega_{10}^2\omega_7^2 + 16\omega_{10}^3\omega_7^2v_2^2 + 20\omega_{16}^2\omega_{10}^2c_s^2 - 120\omega_{16}^2\omega_{10}\omega_7^2v_2^2 + 28\omega_{16}^2\omega_{10}^2\omega_7 + 80\omega_{16}^2\omega_7^2v_2^2 + 68\omega_{16}\omega_{10}^3\omega_7v_2^2 + 56\omega_{16}\omega_{10}^2\omega_7^2c_s^2 - 68\omega_{16}^2\omega_{10}^2\omega_7v_2^2 - 8\omega_{10}^3\omega_7^2 + 16\omega_{10}^3\omega_7^2c_s^2 - 32\omega_{16}\omega_{10}\omega_7^2c_s^2 - 16\omega_{10}^2\omega_7^2v_2^2 - 16\omega_{10}^3\omega_7c_s^2 - 28\omega_{16}\omega_{10}^3v_2^2 + 43\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2 + 16\omega_{16}\omega_{10}^2\omega_7 - 43\omega_{16}\omega_{10}^3\omega_7^2v_2^2 + 64\omega_{16}^2\omega_{10}\omega_7v_2^2 - 24\omega_{16}^2\omega_{10}\omega_7 + 17\omega_{16}\omega_{10}^3\omega_7^2 - 16\omega_{16}\omega_{10}^2\omega_7c_s^2 - 16\omega_{10}^3\omega_7v_2^2 - 28\omega_{16}\omega_{10}^3\omega_7 - 32\omega_{16}^2\omega_7^2 + 25\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 + 48\omega_{16}^2\omega_{10}\omega_7^2 - 20\omega_{16}\omega_{10}^3c_s^2 - 16\omega_{10}^2\omega_7^2c_s^2 - 64\omega_{16}\omega_{10}\omega_7^2v_2^2 - 48\omega_{16}\omega_{10}^2\omega_7v_2^2 - 12\omega_{16}^2\omega_{10}^2 - 25\omega_{16}\omega_{10}^3\omega_7^2c_s^2 - 40\omega_{16}\omega_{10}^2\omega_7^2 + 32\omega_{16}^2\omega_{10}\omega_7c_s^2)\frac{\rho v_2 v_3}{4\omega_{16}^2\omega_{10}^3\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = (27\omega_3\omega_1\omega_2^3v_3^2 - 54\omega_3c_s^2\omega_1\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 27c_s^2\omega_1^3\omega_2^2 + 5\omega_3\omega_1^3\omega_2^2v_3^2 - 51\omega_3\omega_1^2\omega_2^2 + 27\omega_3c_s^2\omega_1\omega_2^3 - 6\omega_1^2\omega_2^2v_3^2 - 12\omega_1\omega_2^3 + 84\omega_3c_s^2\omega_1^3 - 18c_s^2\omega_1^2\omega_2^2 - 66\omega_3\omega_1v_2^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 - 12\omega_3c_s^2\omega_2^3 + 6\omega_3\omega_1\omega_2^2v_3^2 - 6\omega_1^3\omega_2v_3^2 + 48\omega_3\omega_1^3v_2^2 - 9\omega_1^2\omega_2^3v_3^2 - 18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2v_3^2 - 5\omega_3\omega_1^3\omega_2^2 - 66\omega_3\omega_1^3v_2^2\omega_2 + 12\omega_3\omega_1^3v_3^2 - 120\omega_3\omega_1v_2^2\omega_2^2 + 9\omega_1^3\omega_2^2v_3^2 + 36c_s^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 - 9\omega_3\omega_1^2\omega_2^2v_3^2 - 9\omega_1^3\omega_2^2 + 12\omega_1\omega_2^3v_3^2 + 132\omega_3\omega_1^2v_2^2\omega_2^2 - 24\omega_3\omega_2^3v_3^2 + 15\omega_3c_s^2\omega_1^3\omega_2^2 - 12\omega_3\omega_2^3 - 12\omega_3\omega_1^2v_2^2\omega_2 - 18\omega_3\omega_1^3\omega_2v_3^2 - 15\omega_3c_s^2\omega_1^2\omega_2^3 + 42\omega_3\omega_1\omega_2^2 - 5\omega_3\omega_1^2\omega_2^3v_3^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 + 9\omega_1^2\omega_2^3 - 36\omega_3\omega_1^3 + 3\omega_3\omega_1\omega_2^3 + 81\omega_3c_s^2\omega_1^2\omega_2^2 + 84\omega_3v_2^2\omega_2^3 + 6\omega_1^2\omega_2^2)\frac{\rho v_2 v_3}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (-42c_s^2\omega^2v_2^2 + 36c_s^2\omega + 4\omega^3v_2^4 - 36v_2^4 - 54\omega v_2^2 + 12c_s^2\omega^3v_2^2 - 12c_s^2\omega^2 + 36c_s^4 - 26\omega^2v_2^4 + 54\omega v_2^4 + 26\omega^2v_2^2 - 36c_s^2v_2^2 - 54c_s^4\omega - 24c_s^2 + 20c_s^4\omega^2 + 36v_2^2 - c_s^4\omega^3 + 54c_s^2\omega v_2^2 - 4\omega^3v_2^2)\frac{\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (6\omega_{16}\omega_{10}^2\omega_7^3c_s^2 + 24\omega_{16}\omega_{10}^2\omega_7^2v_2^2 + 90\omega_{16}^2\omega_{10}\omega_7^3v_2^2 + 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 30\omega_{16}\omega_{10}^3\omega_7^2c_s^2v_2^2 - 12\omega_{16}\omega_{10}^3\omega_7c_s^2 - 72\omega_{16}^2\omega_7^3v_2^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4 + 19\omega_{16}^2\omega_{10}^2\omega_7^3v_2^4 - 12\omega_{10}^2\omega_7^3v_2^4 + 12\omega_{16}^2\omega_{10}^3\omega_7v_2^4 - 12\omega_{10}^3\omega_7^2c_s^2v_2^2 + 12\omega_{10}^3\omega_7^2v_2^2 + 18\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 - 81\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_2^2 - 27\omega_{16}\omega_{10}^3\omega_7^3v_2^4 - 18\omega_{16}\omega_{10}^3\omega_7^2c_s^4 - 36\omega_{16}\omega_{10}\omega_7^3v_2^4 - 24\omega_{16}^2\omega_{10}^3\omega_7c_s^4 - 36\omega_{16}\omega_{10}\omega_7^3c_s^2v_2^2 + \omega_{16}^2\omega_{10}\omega_7^3c_s^4 + 12\omega_{16}^2\omega_{10}^2\omega_7^2v_2^4 + 12\omega_{16}^2\omega_{10}\omega_7^3c_s^2 + 162\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2v_2^2 - 12\omega_{16}^2\omega_7^3c_s^2 + 24\omega_{16}\omega_{10}^3\omega_7v_2^2 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2 - 60\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 + 48\omega_{16}\omega_{10}^3\omega_7^2v_2^4 + 6\omega_{16}\omega_{10}^3\omega_7^3c_s^4 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2v_2^2 - 4\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2 + 252\omega_{16}^2\omega_7^3c_s^2v_2^2 - 5\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 306\omega_{16}^2\omega_{10}\omega_7^3c_s^2v_2^2 - 12\omega_{10}^3\omega_7^3v_2^2 - 12\omega_{16}^2\omega_{10}\omega_7^3c_s^4 - 24\omega_{16}\omega_{10}^3\omega_7v_2^4 + 12\omega_{16}^2\omega_7^3c_s^4 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^4 + 60\omega_{16}\omega_{10}^2\omega_7^3v_2^4 + 12\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2v_2^2 + 36\omega_{16}\omega_{10}\omega_7^3v_2^2 + 12\omega_{10}^3\omega_7^3c_s^2v_2^2 + 6\omega_{16}^2\omega_{10}^3\omega_7c_s^2 - 48\omega_{16}^2\omega_{10}^2\omega_7c_s^2v_2^2 - \omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2 + 4\omega_{16}^2\omega_{10}^3\omega_7^3v_2^4 + 13\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 + 12\omega_{10}^3\omega_7^3v_2^4 - 48\omega_{16}\omega_{10}^3\omega_7^2v_2^2 - 6\omega_{16}\omega_{10}^3\omega_7^3c_s^2 - 21\omega_{16}\omega_{10}^3\omega_7^3c_s^2v_2^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 19\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 - 12\omega_{16}\omega_{10}^3\omega_7c_s^2v_2^2 - 48\omega_{16}^2\omega_{10}^3c_s^2v_2^2 + 12\omega_{10}^2\omega_7^3v_2^2 - 108\omega_{16}^2\omega_{10}\omega_7^2c_s^2v_2^2 - 12\omega_{16}^2\omega_{10}^3\omega_7v_2^2 + 54\omega_{16}\omega_{10}^2\omega_7^3c_s^2v_2^2 - 6\omega_{16}\omega_{10}^2\omega_7^3c_s^4 - 24\omega_{16}\omega_{10}^2\omega_7^2v_2^4 - 90\omega_{16}^2\omega_{10}\omega_7^3v_2^4 - 12\omega_{16}^2\omega_{10}\omega_7^2c_s^4 + 12\omega_{16}^2\omega_{10}^3c_s^4 + 72\omega_{16}^2\omega_7^3v_2^4 + 12\omega_{16}\omega_{10}^3\omega_7c_s^4 + 60\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_2^2 + 27\omega_{16}\omega_{10}^3\omega_7^3v_2^2 + 18\omega_{16}\omega_{10}^3\omega_7^2c_s^2 + 102\omega_{16}^2\omega_{10}^3\omega_7c_s^2v_2^2 - 12\omega_{10}^3\omega_7^2v_2^4 - 18\omega_{16}^2\omega_{10}^3\omega_7^2v_2^4 - \omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 - 12\omega_{10}^2\omega_7^3c_s^2v_2^2)\frac{\rho}{12\omega_{16}^2\omega_{10}^3\omega_7^3}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (6\omega_{16}\omega_{10}^2\omega_7^3c_s^2 + 90\omega_{16}^2\omega_{10}\omega_7^3v_2^2 + 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 54\omega_{16}\omega_{10}^3\omega_7^2c_s^2v_2^2 - 12\omega_{16}\omega_{10}^3\omega_7c_s^2 - 72\omega_{16}^2\omega_7^3v_2^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4 + 19\omega_{16}^2\omega_{10}^2\omega_7^3v_2^4 - 36\omega_{10}^2\omega_7^3v_2^4 - 108\omega_{10}^3\omega_7^2c_s^2v_2^2 + 36\omega_{10}^3\omega_7^2v_2^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_2^2 - 39\omega_{16}\omega_{10}^3\omega_7^3v_2^4 - 18\omega_{16}\omega_{10}^3\omega_7^2c_s^4 - 36\omega_{16}\omega_{10}\omega_7^3v_2^4 - 24\omega_{16}^2\omega_{10}^3\omega_7c_s^4 - 108\omega_{16}\omega_{10}\omega_7^3c_s^2v_2^2 + \omega_{16}^2\omega_{10}\omega_7^3c_s^4 + 12\omega_{16}^2\omega_{10}\omega_7^3c_s^2 + 18\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2v_2^2 - 12\omega_{16}^2\omega_7^3c_s^2 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2 - 72\omega_{16}\omega_{10}^2\omega_7^3v_2^2 + 36\omega_{16}\omega_{10}^3\omega_7^2v_2^2 + 6\omega_{16}\omega_{10}^3\omega_7^3c_s^4 + 36\omega_{16}\omega_{10}^2\omega_7^2c_s^2v_2^2 - 4\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2 + 252\omega_{16}^2\omega_7^3c_s^2v_2^2 - 5\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 306\omega_{16}^2\omega_{10}\omega_7^3c_s^2v_2^2 - 36\omega_{10}^3\omega_7^3v_2^2 - 12\omega_{16}^2\omega_{10}\omega_7^3c_s^4 + 12\omega_{16}^2\omega_7^3c_s^4 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^4 + 72\omega_{16}\omega_{10}^2\omega_7^3v_2^4 + 12\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2v_2^2 + 36\omega_{16}\omega_{10}\omega_7^3v_2^2 + 108\omega_{10}^3\omega_7^3c_s^2v_2^2 + 6\omega_{16}^2\omega_{10}^3\omega_7c_s^2 - \omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 + 4\omega_{16}^2\omega_{10}^3\omega_7^3v_2^4 + 13\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 + 36\omega_{10}^3\omega_7^3v_2^4 - 36\omega_{16}\omega_{10}^3\omega_7^2v_2^2 - 6\omega_{16}\omega_{10}^3\omega_7^3c_s^2 - 99\omega_{16}\omega_{10}^3\omega_7^3c_s^2v_2^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 19\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 + 36\omega_{16}\omega_{10}^3\omega_7c_s^2v_2^2 + 36\omega_{10}^3\omega_7^3v_2^2 - 36\omega_{16}^2\omega_{10}\omega_7^3c_s^2v_2^2 + 198\omega_{16}\omega_{10}^2\omega_7^3c_s^2v_2^2 - 6\omega_{16}\omega_{10}^2\omega_7^3c_s^4 - 90\omega_{16}^2\omega_{10}\omega_7^3v_2^4 - 12\omega_{16}^2\omega_{10}\omega_7^2c_s^4 + 12\omega_{16}^2\omega_{10}^3c_s^4 + 72\omega_{16}^2\omega_7^3v_2^4 + 12\omega_{16}\omega_{10}^3\omega_7c_s^4 + 60\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_2^2 + 39\omega_{16}\omega_{10}^3\omega_7^3v_2^2 + 18\omega_{16}\omega_{10}^3\omega_7^2c_s^2 - 18\omega_{16}^2\omega_{10}^3\omega_7c_s^2v_2^2 - 36\omega_{10}^3\omega_7^2v_2^4 - 6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^4 - \omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 - 108\omega_{10}^2\omega_7^3c_s^2v_2^2)\frac{\rho}{12\omega_{16}^2\omega_{10}^3\omega_7^3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (-72\omega_3^3\omega_{11}\omega_5^2v_2^2 + 54\omega_3^2c_s^2\omega_{11}\omega_5^3v_2^2 - 108\omega_3^2c_s^2\omega_5^3v_2^2 - 5\omega_3^2c_s^2\omega_{11}^2\omega_5^3 + \omega_3^3c_s^4\omega_{11}^2\omega_5^2 + 12\omega_3^3c_s^2\omega_{11}^2\omega_5^3v_2^2 - 12\omega_3^3c_s^4\omega_{11}^2\omega_5 + 19\omega_3^3\omega_{11}^2\omega_5^2v_2^4 + 12\omega_3^3c_s^4\omega_{11}^2 - \omega_3^3c_s^4\omega_{11}^2\omega_5^3 - 6\omega_3^2c_s^2\omega_{11}^2\omega_5^2 - 36\omega_3^3\omega_5^3v_2^2 + 90\omega_3^3\omega_{11}^2\omega_5v_2^2 - 6\omega_3^2\omega_{11}^2\omega_5^3v_2^4 + 12\omega_3c_s^4\omega_{11}\omega_5^3 - 108\omega_3^3c_s^2\omega_5^2v_2^2 + 36\omega_3c_s^2\omega_{11}\omega_5^3v_2^2 - 36\omega_3^2\omega_{11}\omega_5^3v_2^2 + 72\omega_3^3\omega_{11}^2v_2^4 - 36\omega_3^3\omega_{11}\omega_5v_2^4 + 12\omega_3^3c_s^2\omega_{11}^2\omega_5 + 4\omega_3^3\omega_{11}^2\omega_5^3v_2^4 - \omega_3^3c_s^2\omega_{11}^2\omega_5^2 + 60\omega_3^3c_s^2\omega_{11}^2\omega_5^2v_2^2 - 36\omega_3^2\omega_5^3v_2^4 + 13\omega_3^3c_s^4\omega_{11}^2\omega_5^3 + 12\omega_3^2c_s^2\omega_{11}^2\omega_5 + 39\omega_3^3\omega_{11}\omega_5^3v_2^2 + 36\omega_3^2c_s^2\omega_{11}\omega_5^2v_2^2 - 108\omega_3^3c_s^2\omega_{11}\omega_5v_2^2 + 6\omega_3^2c_s^4\omega_{11}^2\omega_5^2 + 108\omega_3^2c_s^2\omega_5^3v_2^2 + 36\omega_3^3\omega_5^2v_2^2 + 12c_s^4\omega_{11}^2\omega_5^3 - 12\omega_3c_s^2\omega_{11}\omega_5^3 - 36\omega_3^2c_s^2\omega_{11}^2\omega_5v_2^2 - 12\omega_3^3c_s^4\omega_{11}^2\omega_5 - 6\omega_3^3c_s^2\omega_{11}\omega_5^3 + 12\omega_3^2c_s^4\omega_{11}\omega_5^2 + 198\omega_3^3c_s^2\omega_{11}\omega_5^2v_2^2 - 39\omega_3^3\omega_{11}\omega_5^3v_2^4 + 18\omega_3^2c_s^2\omega_{11}^2\omega_5^2v_2^2 + 6\omega_3c_s^2\omega_{11}^2\omega_5^3 - 4\omega_3^3\omega_{11}^2\omega_5^3v_2^2 + 36\omega_3^2\omega_5^3v_2^2 - 36\omega_3^3\omega_5^2v_2^4 + 252\omega_3^3c_s^2\omega_{11}^2v_2^2 - 18\omega_3^2c_s^4\omega_{11}\omega_5^3 - 306\omega_3^3c_s^2\omega_{11}^2\omega_5v_2^2 + 6\omega_3^3c_s^2\omega_{11}\omega_5^2 - 12\omega_3^3c_s^2\omega_{11}^2 -$

$12\omega_3^2c_s^2\omega_{11}\omega_5^2 + 6\omega_3^3c_s^4\omega_{11}\omega_5^3 - 3\omega_3^2c_s^2\omega_{11}^2\omega_5^3v_2^2 - 19\omega_3^3\omega_{11}^2\omega_5^2v_2^2 + 72\omega_3^3\omega_{11}\omega_5^2v_2^4 - 24\omega_3c_s^4\omega_{11}^2\omega_5^3 - 99\omega_3^3c_s^2\omega_{11}\omega_5^3v_2^2 + 36\omega_3^3\omega_{11}\omega_5v_2^2 - 72\omega_3^3\omega_{11}^2v_2^2 + 36\omega_3^2\omega_{11}\omega_5^3v_2^4 - 6\omega_3^3c_s^4\omega_{11}\omega_5^2 + 18\omega_3^2c_s^2\omega_{11}\omega_5^3 + 36\omega_3^3\omega_5^3v_2^4 - 18\omega_3c_s^2\omega_{11}^2\omega_5^3v_2^2 + 6\omega_3^2\omega_{11}^2\omega_5^3v_2^2 - 90\omega_3^3\omega_{11}^2\omega_5v_2^4)\frac{\rho}{12\omega_3^3\omega_{11}^2\omega_5^3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (54\omega_4^2\omega_1^3v_2^4\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3v_3^2 + 108\omega_3^2\omega_1^2v_2^2\omega_2^3 - 492\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 - 96\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2v_3^2 + 72\omega_3^2\omega_4c_s^4\omega_1\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 + 336\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 + 324\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 + 36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 - 2\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 + 18\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 12\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 96\omega_3\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 + 288\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 24\omega_3\omega_4^2\omega_1^3v_2^4\omega_2 + 72\omega_4^2\omega_1^2v_2^2\omega_2^3 + 54\omega_3^2\omega_1^3v_2^4\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3v_3^2 - 96\omega_3^2\omega_4^2\omega_1^3v_2^2 - 216\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 108\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 - 852\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 8\omega_3^2\omega_4^2c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 108\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 - 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 - 36\omega_4^2\omega_1^3v_2^4\omega_2^2 + 48\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2v_3^2 + 144\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2v_3^2 + 96\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 - 24\omega_3\omega_4^2\omega_1v_2^4\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3\omega_2v_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2v_2^2 - 324\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 192\omega_3^2\omega_4^2v_2^4\omega_2^3 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 72\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^2 - 36\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 36\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 297\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2v_3^2 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3 + 240\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 24\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 - 72\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 117\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 108\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 - 117\omega_3\omega_4^2\omega_1^3v_2^4\omega_2^3 - 36\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 16\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 20\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 - 18\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 38\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 288\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^3 + 72\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 264\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 - 216\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 - 72\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 - 180\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 40\omega_3\omega_4^2c_s^4\omega_1^2v_2^2 + 108\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2 - 297\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 - 108\omega_3\omega_4\omega_1^3v_2^2\omega_2^3 + 60\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^2 + 168\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 12\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 + 24\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^3 + 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 + 86\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 - 16\omega_3^2\omega_4^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^2\omega_2^2v_3^2 + 576\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3v_3^2 + 80\omega_3^2\omega_4^2c_s^4\omega_2^3 + 204\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 108\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 162\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 + 48\omega_3\omega_4^2c_s^2\omega_1^2v_2^2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 468\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 36\omega_4^2\omega_1^3v_2^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 + 24\omega_3\omega_4^2\omega_1v_2^2\omega_2^3 - 48\omega_3^2\omega_4^2v_2^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2\omega_4\omega_1v_2^4\omega_2^3 - 172\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 108\omega_3^2\omega_1^2v_2^4\omega_2^3 - 54\omega_4^2\omega_1^3v_2^2\omega_2^3 - 108\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 + 72\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^2v_2\omega_2v_3^2 + 162\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3v_3^2 + 16\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 + 12\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 + 16\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 + 264\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 - 54\omega_3^2\omega_1^3v_2^2\omega_2^3 + 24\omega_3\omega_4^2\omega_1^3v_2^2\omega_2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 - 72\omega_4^2\omega_1^2v_2^4\omega_2^3 + 12\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^3 - 540\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 + 18\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_2^3v_3^2 - 492\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 108\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2 + 180\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2v_3^2 + 36\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^2 + 40\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4 - 60\omega_3\omega_4^2\omega_1^2v_2^4\omega_2^2 + 108\omega_3\omega_4\omega_1^3v_2^4\omega_2^3 + 48\omega_3\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 + 432\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^2 + 36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2v_3^2 + 48\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 + 648\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 - 72\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 117\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^3 + 32\omega_3^2\omega_4^2c_s^4\omega_1^3 - 144\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 + 117\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^3 - 16\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 + 174\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 432\omega_3^2\omega_4^2v_2^2\omega_2^3v_3^2 - 108\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 - 288\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 - 86\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 - 32\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 216\omega_3\omega_4^2\omega_1^2v_2^4\omega_2^2 - 18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3v_2^2v_3^2)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (108\omega v_1v_2^2v_3^2 + 72c_s^2v_1^2v_2 + 108c_s^2\omega v_1v_3^2 + 42c_s^2\omega^2v_2v_3^2 + 108c_s^2\omega v_1v_2^2 - 4c_s^4\omega^2v_2 - 108\omega v_1^2v_2v_3^2 + 72c_s^2v_2v_3^2 + 42c_s^2\omega^2v_1^2v_2 + 3c_s^2\omega^3v_1v_2^2 + 3c_s^2\omega^3v_1v_3^2 + 2c_s^4\omega^3v_2 - 108c_s^2\omega v_1^2v_2 - 72c_s^2v_1v_3^2 - 72c_s^2v_1v_2^2 - 72v_1v_2^2v_3^2 - 42\omega^2v_1v_2^2v_3^2 + 42\omega^2v_1^2v_2v_3^2 - 3c_s^2\omega^3v_2v_3^2 + 72v_1^2v_2v_3^2 - 108c_s^2\omega v_2v_3^2 - 42c_s^2\omega^2v_1v_3^2 - 42c_s^2\omega^2v_1v_2^2 - 3\omega^3v_1^2v_2v_3^2 + 3\omega^3v_1v_2^2v_3^2 - 3c_s^2\omega^3v_1^2v_2)\frac{1}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{12} - 6\omega_6^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{12} - 12\omega_6^2\omega_7\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{12} + 48\omega_6\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5^2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5v_2v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7\omega_{14}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5v_2 - 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5^2v_2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2\omega_{12} + 24\omega_6^2\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_5v_2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2\omega_{12} + 24\omega_6^2\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_5^2v_2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5v_2^2v_3^2\omega_{12} + 24\omega_6^2\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_5^2v_2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{12} - 24\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5v_2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{12} - 6\omega_6^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5^2v_2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2 + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2 - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{12} + 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_2v_3^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2 + 24\omega_6^2\omega_{19}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2v_2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_2v_3^2 - 3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2 + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2 - 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_3^2\omega_{12} + 6\omega_6^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2 + 3\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5v_2v_3^2 + 48\omega_6\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5v_2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{12} - 3\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2 - 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{12} + 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_2v_3^2\omega_{12} + 24\omega_6^2\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5v_2\omega_{12} - 6\omega_6^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{12} + 12\omega_6^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2v_2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{12} - 24\omega_6\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2v_2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2^2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7\omega_{14}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{12} + 3\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{12} - 6\omega_6^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1^2\omega_5v_2v_3^2 + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2 + 12\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2v_2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{12} + 3\omega_6^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{12} + 3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_2v_3^2\omega_{12} + 24\omega_6^2\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5v_2\omega_{12} - 6\omega_6^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5^2v_2^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2v_2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2v_2v_3^2 + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_3^2\omega_{12} - 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5v_2^2v_3^2 - 6\omega_6^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{12} + 6\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{12} +$

$12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2 v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2^2 +$
$12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8^2 v_1\omega_5 v_3^2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8^2 v_1^2\omega_5 v_2\omega_{12} -$
$3\omega_6^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} + 24\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_3^2 -$
$6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2 v_2 v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8^2 v_1\omega_5 v_3^2 + 12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5^2 v_2 v_3^2\omega_{12} +$
$6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2^2 v_3^2\omega_{12} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{12} - 3\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2 v_3^2\omega_{12} -$
$12\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5^2 v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{12} - 48\omega_6^2\omega_{19}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2 v_2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8^2 v_1\omega_5 v_2^2\omega_{12} -$
$12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} + 3\omega_6^2\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8 v_1^2\omega_5^2 v_2 v_3^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{12} +$
$12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2 v_1\omega_5 v_2^2 v_3^2\omega_{12} - 12\omega_6^2\omega_7 c_s^2\omega_{14}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{12} + 6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2 v_3^2\omega_{12} - 24\omega_6^2\omega_{19}\omega_7^2 c_s^4\omega_{20}\omega_{14}\omega_5^2 v_2\omega_{12} +$
$12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2 v_2 v_3^2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_1^2\omega_5^2 v_2\omega_{12} - 6\omega_6^2\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{12} -$
$12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8\omega_5^2 v_2 v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7^2\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8^2 v_1^2\omega_5 v_2\omega_{12} +$
$6\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2 v_3^2\omega_{12} - 12\omega_6^2\omega_7 c_s^2\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7\omega_{14}\omega_8 v_1^2\omega_5^2 v_2 v_3^2\omega_{12} -$
$12\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5^2 v_2 v_3^2\omega_{12} + 3\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2 + 12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2 v_1^2\omega_5 v_2 v_3^2 + 6\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{12} +$
$6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8^2 v_1\omega_5 v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5 v_2 v_3^2 + 12\omega_6^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2 v_3^2\omega_{12} + 12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{12} -$
$24\omega_6\omega_{19} c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{12} - 6\omega_6^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2 v_2 v_3^2\omega_{12} - 6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2 + 6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1^2\omega_5 v_2\omega_{12} -$
$12\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} - 12\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5^2 v_2^2\omega_{12})\frac{1}{12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (12\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 v_1 v_2^2 v_3^2\omega_{12} - 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{12} + 12\omega_6\omega_{19} c_s^2\omega_{20}\omega_5 v_2 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1 v_3^2 -$
$6\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{12} + 6\omega_6\omega_7 c_s^2\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{12} - 12\omega_6\omega_{19} c_s^2\omega_{20}\omega_{14} v_1^2\omega_5 v_2\omega_{12} + 12\omega_6\omega_{19}\omega_7\omega_{14} v_1^2 v_2 v_3^2\omega_{12} -$
$6\omega_6\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{12} + 6\omega_6\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{12} + 3\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2 - 6\omega_6\omega_{19}\omega_7\omega_{14}\omega_8 v_1^2 v_2 v_3^2\omega_{12} +$
$12\omega_6\omega_{19}\omega_7 c_s^2\omega_{14} v_1\omega_5 v_2^2\omega_{12} + 12\omega_6\omega_{19} c_s^2\omega_{14} v_1^2\omega_5 v_2\omega_{12} - 12\omega_6\omega_{19} c_s^2\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{12} + 3\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2 +$
$6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1^2\omega_5 v_2\omega_{12} + 12\omega_6 c_s^2\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{12} + 3\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{12} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} v_1 v_2^2\omega_{12} -$
$6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2 v_2 - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1 v_2^2 + 12\omega_6\omega_{19}\omega_{20} v_1^2\omega_5 v_2 v_3^2\omega_{12} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} v_1 v_3^2\omega_{12} -$
$6\omega_6\omega_7\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} - 6\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 v_1^2\omega_5 v_2 v_3^2 + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20} v_2 v_3^2\omega_{12} - 12\omega_6\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} -$
$3\omega_6\omega_7\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} + 3\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} + 12\omega_6\omega_{19}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} -$
$6\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1 v_2^2 v_3^2\omega_{12} - 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} - 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8\omega_5 v_2 v_3^2 - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} v_1^2 v_2\omega_{12} -$
$6\omega_6\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{14} v_1\omega_5 v_3^2\omega_{12} - 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} - 12\omega_6\omega_{19}\omega_7\omega_{14} v_1^2\omega_5 v_2 v_3^2\omega_{12} +$
$3\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} + 6\omega_6\omega_7 c_s^2\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} + 6\omega_6\omega_{19}\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_1 v_2^2\omega_{12} +$
$3\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_2 v_3^2\omega_{12} - 6\omega_6\omega_7 c_s^2\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} + 12\omega_6\omega_{19}\omega_{14} v_1^2\omega_5 v_2 v_3^2\omega_{12} +$
$12\omega_6\omega_{19} c_s^2\omega_{20}\omega_{14} v_1\omega_5 v_3^2\omega_{12} + 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 12\omega_6\omega_{19} c_s^2\omega_{14} v_1\omega_5 v_3^2\omega_{12} - 6\omega_6\omega_{19} c_s^2\omega_{20}\omega_8\omega_5 v_2 v_3^2\omega_{12} +$
$12\omega_6\omega_{19}\omega_{20}\omega_{14} v_1\omega_5 v_2^2 v_3^2\omega_{12} + 12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14} v_1^2\omega_5 v_2 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 12\omega_6\omega_{19}\omega_7\omega_{14} v_1 v_2^2 v_3^2\omega_{12} -$
$3\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 v_1^2 v_2 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 v_1\omega_5 v_2^2 v_3^2 -$
$6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_2 v_3^2 + 6\omega_6\omega_{19}\omega_7\omega_{14}\omega_8 v_1 v_2^2 v_3^2\omega_{12} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_5 v_2 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{14} v_1 v_2^2\omega_{12} +$
$2\omega_6\omega_{19}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8\omega_5 v_2\omega_{12} + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_2 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7\omega_{20} v_1^2\omega_5 v_2 v_3^2\omega_{12} - 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1^2\omega_5 v_2 -$
$6\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{14} v_1 v_3^2\omega_{12} - 6\omega_6\omega_{19}\omega_{20}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} - 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_1^2 v_2\omega_{12} -$
$6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5 v_2^2\omega_{12} - 12\omega_6\omega_{19} c_s^2\omega_{14} v_1\omega_5 v_2^2\omega_{12} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{14} v_1^2\omega_5 v_2\omega_{12} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{14} v_1^2 v_2\omega_{12} -$
$3\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2 - 4\omega_{19}\omega_7 c_s^4\omega_{20}\omega_{14}\omega_8\omega_5 v_2\omega_{12} + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_1 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1^2 v_2 v_3^2\omega_{12} +$
$12\omega_6\omega_{19} c_s^2\omega_{20}\omega_{14} v_1\omega_5 v_2^2\omega_{12} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_5 v_2 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} v_1\omega_5 v_2^2\omega_{12} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1^2 v_2 -$
$12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20} v_1 v_2^2\omega_{12} + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1 v_2^2 + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1 v_3^2 + 6\omega_6\omega_{19} c_s^2\omega_{20}\omega_8 v_1\omega_5 v_2^2\omega_{12} +$
$6\omega_6\omega_{19}\omega_{20}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20} v_1\omega_5 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} + 12\omega_6\omega_{19}\omega_7\omega_{20} v_1\omega_5 v_2^2 v_3^2\omega_{12} -$
$6\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 12\omega_6\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_5 v_2 v_3^2\omega_{12} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20} v_1^2 v_2\omega_{12} + 12\omega_6\omega_{19} c_s^2\omega_{20} v_1^2\omega_5 v_2\omega_{12} +$
$12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20} v_1\omega_5 v_2^2\omega_{12} + 12\omega_6\omega_{19}\omega_7\omega_{20} v_1^2 v_2 v_3^2\omega_{12} + 6\omega_6\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} + 12\omega_6\omega_{19} c_s^2\omega_{14}\omega_5 v_2 v_3^2\omega_{12} +$
$6\omega_6\omega_{19} c_s^2\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14} v_1\omega_5 v_2^2 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20} v_1 v_3^2\omega_{12} - 12\omega_6\omega_{19} c_s^2\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} -$
$12\omega_6\omega_{19}\omega_{20}\omega_{14} v_1^2\omega_5 v_2 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8\omega_5 v_2 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} v_2 v_3^2\omega_{12} + 12\omega_6 c_s^2\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} -$
$12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} v_1\omega_5 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_{14} v_1\omega_5 v_2^2 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14} v_1^2 v_2 v_3^2\omega_{12} - 6\omega_6\omega_{19}\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} +$
$12\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 v_1^2 v_2 v_3^2 + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5 v_3^2 + 12\omega_6\omega_{19}\omega_7\omega_{14} v_1\omega_5 v_2^2 v_3^2\omega_{12} - 3\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} -$
$12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1^2 v_2\omega_{12} - 12\omega_6 c_s^2\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_2 v_3^2 + 6\omega_6\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} +$
$12\omega_6\omega_{19} c_s^2\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} - 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1 v_2^2\omega_{12} - 12\omega_6\omega_{19}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{14}\omega_5 v_2 v_3^2\omega_{12} +$
$3\omega_6\omega_7\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} - 6\omega_6\omega_{19}\omega_7\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} + 12\omega_6\omega_{14}\omega_8 v_1^2\omega_5 v_2 v_3^2\omega_{12} +$
$12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1 v_3^2\omega_{12} - 6\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1^2 v_2 v_3^2 + 6\omega_6\omega_7\omega_{14}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{12} - 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20} v_1^2\omega_5 v_2\omega_{12} -$
$12\omega_6\omega_{19} c_s^2\omega_{20} v_1\omega_5 v_2^2\omega_{12} + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5 v_2^2 + 6\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} - 3\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2 -$
$12\omega_6\omega_{19}\omega_{20} v_1\omega_5 v_2^2 v_3^2\omega_{12} - 12\omega_6\omega_{19} c_s^2\omega_{20} v_1\omega_5 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1^2 v_2\omega_{12} + 3\omega_6\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{12} -$
$6\omega_6\omega_7 c_s^2\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{12} + 6\omega_6 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{12} - 6\omega_6\omega_{19} c_s^2\omega_{20}\omega_8 v_1^2\omega_5 v_2\omega_{12} + 12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14} v_1 v_2^2 v_3^2\omega_{12} -$
$12\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 v_1 v_2^2 v_3^2 + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1 v_2^2\omega_{12} - 6\omega_6\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{12} -$
$6\omega_6\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_2 v_3^2\omega_{12} + 12\omega_6\omega_{19}\omega_7 c_s^2\omega_{14} v_2 v_3^2\omega_{12} - 12\omega_6 c_s^2\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{12} - 3\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 v_3^2\omega_{12} +$
$12\omega_6\omega_{19} c_s^2\omega_{14}\omega_8 v_1\omega_5 v_3^2\omega_{12} - 6\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1 v_3^2\omega_{12} + 6\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1 v_2^2 v_3^2 - 3\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 -$
$12\omega_6\omega_{19}\omega_7\omega_{20}\omega_8 v_1 v_2^2 v_3^2\omega_{12} + 12\omega_6\omega_{19}\omega_7\omega_{20} v_1^2\omega_5 v_2 v_2^2\omega_{12})\frac{1}{12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-2+\omega_2)\frac{c_s^4 v_2}{6\omega_2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (3\omega_1 v_3^2 - 2\omega_1 - 3v_1^2\omega_2 + 2c_s^2\omega_1 + 2\omega_2 - 3\omega_2 v_3^2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2 + 3\omega_1 v_1^2)\frac{c_s^2 v_2}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2 \partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = (-14c_s^2\omega^2 v_3^2 - 2\omega^3 v_1 v_2 v_3^2 - 14c_s^2\omega^2 v_2^2 - 24v_2^2 v_3^2 - 2c_s^2\omega^3 v_1 v_2 + \omega^3 v_2^2 v_3^2 + c_s^2\omega^3 v_2^2 + 36\omega v_2^2 v_3^2 + c_s^2\omega^3 v_3^2 - 72c_s^2\omega v_1 v_2 +$
$48v_1 v_2 v_3^2 + 28\omega^2 v_1 v_2 v_3^2 - 14\omega^2 v_2^2 v_3^2 + 28c_s^2\omega^2 v_1 v_2 - 24c_s^2 v_3^2 - 24c_s^2 v_2^2 + 48c_s^2 v_1 v_2 - 72\omega v_1 v_2 v_3^2 + 36c_s^2\omega v_3^2 + 36c_s^2\omega v_2^2)\frac{\rho}{4\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = (4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_9\omega_{12} + 8\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} +$
$8\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 v_1\omega_5^2 v_2\omega_9\omega_{12} + \omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5 v_3^2\omega_9\omega_{12} -$
$8\omega_6\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1 v_2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8\omega_5 v_2^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2 v_3^2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_9 + 2\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} + 12\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2 v_2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_2^2\omega_9 - 4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8\omega_5^2 v_2^2\omega_9\omega_{12} -$
$8\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_9\omega_{12} + 12\omega_6\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_2^2 v_3^2\omega_9 + 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_3^2\omega_9 - 8\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8 v_1\omega_5^2 v_2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5 v_2^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5 v_2^2 v_3^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} +$
$8\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8 v_1\omega_5 v_2 v_3^2\omega_9\omega_{12} + 8\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2 v_3^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2 v_3^2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9 -$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5 v_3^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} + 8\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 v_1 v_2\omega_9\omega_{12} + 8\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8 v_1\omega_5 v_2 v_3^2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2 v_2^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5 v_3^2\omega_9 + 8\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_9\omega_{12} -$
$16\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2 v_2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14} v_1\omega_5^2 v_2\omega_9\omega_{12} + 4\omega_6\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2 v_2^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5 v_2^2 v_3^2\omega_9 + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5 v_2^2 v_3^2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5 v_2^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5 v_3^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8^2\omega_5^2 v_3^2\omega_9\omega_{12} - \omega_6^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} +$
$8\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_8 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2 v_2^2\omega_9\omega_{12} -$
$8\omega_6\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8\omega_5 v_3^2\omega_9\omega_{12} + 8\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_{12} + 2\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_8\omega_5^2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14} v_1\omega_5^2 v_2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} -$
$8\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2 v_3^2\omega_9 -$
$8\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5 v_2^2\omega_9 -$
$4\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_9\omega_{12} + 8\omega_6\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_9 + \omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5 v_2^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} -$
$20\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2\omega_9\omega_{12} + 8\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} +$
$4\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2 v_2\omega_9\omega_{12} - \omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8^2 v_1\omega_5 v_2 v_3^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8\omega_5^2 v_2^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^2 v_3^2\omega_9 - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_3^2\omega_9\omega_{12} + 8\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_2^2 v_3^2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 v_2^2 v_3^2\omega_9\omega_{12} + \omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_{12} + 2\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_{12} -$
$8\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} + 8\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8^2 v_1\omega_5 v_2 v_3^2\omega_9 + 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2\omega_9 -$
$4\omega_6\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9 + 6\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} -$
$\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9 - 6\omega_6\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} +$
$8\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8 v_1\omega_5 v_2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2 v_2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} - 4\omega_6\omega_{19}\omega_{13} c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} +$
$8\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9 + 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9 - \omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9 + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5^2 v_2^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_9\omega_{12} -$
$8\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2\omega_9\omega_{12} - 4\omega_6\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5^2 v_2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14} v_1\omega_5 v_2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5 v_2^2\omega_9\omega_{12} + 8\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2 v_2^2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_1\omega_5 v_2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5 v_2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9 +$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 v_2^2 v_3^2\omega_9\omega_{12} - \omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_9 +$
$8\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_9\omega_{12} - \omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2^2 v_3^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 v_2^2 v_3^2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2 v_3^2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2 v_3^2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2 v_3^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2 c_s^2\omega_{20}\omega_8\omega_5^2 v_3^2\omega_9\omega_{12})\frac{\rho}{4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = (-4\omega_7\omega_{14}\omega_8 v_1\omega_5 v_2 v_3^2\omega_{12} + 2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8\omega_5 v_2^2 + 4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1 v_2\omega_{12} + 4\omega_{19}\omega_7\omega_{14}\omega_5 v_2^2 v_3^2\omega_{12} +$
$8\omega_{19}\omega_7\omega_{20}\omega_8 v_1 v_2 v_3^2 + 2\omega_7\omega_{14}\omega_8\omega_5 v_2^2 v_3^2\omega_{12} - 2\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2^2\omega_{12} + 4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_3^2\omega_{12} - 4\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1 v_2 v_3^2 -$

$4\omega_{19}\omega_7c_s^2\omega_{20}v_2^2\omega_{12} + 2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{12} - 4\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{12} - 2\omega_{19}\omega_7\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{12} - 4c_s^2\omega_{14}\omega_8\omega_5v_2^2\omega_{12} -$
$4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_5v_3^2\omega_{12} - 4\omega_{19}\omega_{20}\omega_5v_2^2v_3^2\omega_{12} + 4\omega_{19}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{12} + 4\omega_{19}c_s^2\omega_{14}\omega_8\omega_5v_2^2\omega_{12} - 8\omega_{19}\omega_7\omega_{14}v_1\omega_5v_2v_3^2\omega_{12} +$
$2\omega_{19}\omega_7c_s^2\omega_{20}\omega_8\omega_5v_3^2 - 4\omega_{19}c_s^2\omega_{20}\omega_5v_2^2\omega_{12} - 8\omega_{19}\omega_7c_s^2\omega_{20}\omega_8v_1v_2\omega_{12} + 4\omega_{19}c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{12} - 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_5v_2^2\omega_{12} +$
$8c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{12} + 4\omega_{19}\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{12} - 4\omega_{19}c_s^2\omega_{20}\omega_5v_3^2\omega_{12} + 8\omega_{19}\omega_{20}v_1\omega_5v_2v_3^2\omega_{12} + 2\omega_{19}\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{12} +$
$2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{12} - 4c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{12} - 4c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{12} - 2\omega_{19}c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{12} + 8\omega_{19}c_s^2\omega_{20}v_1\omega_5v_2\omega_{12} +$
$4\omega_{19}\omega_7c_s^2\omega_{20}\omega_8v_2^2\omega_{12} - 8\omega_{19}\omega_7\omega_{20}\omega_{14}v_1v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7c_s^2\omega_{20}v_3^2\omega_{12} + 4\omega_{19}\omega_7\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{12} + 8\omega_{19}\omega_7\omega_{20}v_1v_2v_3^2\omega_{12} +$
$2\omega_{19}\omega_7\omega_{14}\omega_8v_2^2v_3^2\omega_{12} - 8\omega_{19}c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{12} - 4\omega_{19}\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{12} - 2\omega_{19}\omega_7c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{12} + 4\omega_{19}c_s^2\omega_{20}\omega_{14}\omega_5v_2^2\omega_{12} +$
$4\omega_{19}\omega_7c_s^2\omega_{14}\omega_5v_3^2\omega_{12} - 8\omega_{19}\omega_7\omega_{20}v_1\omega_5v_2v_3^2\omega_{12} - 2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{12} + 8\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}v_1\omega_5v_2\omega_{12} - 8\omega_{19}\omega_7c_s^2\omega_{20}v_1\omega_5v_2\omega_{12} +$
$8\omega_{19}\omega_7\omega_{20}\omega_{14}v_1\omega_5v_2v_3^2\omega_{12} + 2\omega_7c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{12} + \omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{12} - 4\omega_{19}\omega_7c_s^2\omega_{14}v_3^2\omega_{12} + 2\omega_7c_s^2\omega_{14}\omega_8\omega_5v_2^2\omega_{12} +$
$4\omega_{19}\omega_7\omega_{20}\omega_{14}v_2^2v_3^2\omega_{12} - 4\omega_{19}c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{12} - 4\omega_{19}\omega_7c_s^2\omega_{14}v_2^2\omega_{12} + 8\omega_{19}\omega_7c_s^2\omega_{20}\omega_8v_1v_2 + 8\omega_{19}\omega_7c_s^2\omega_{20}v_1v_2\omega_{12} -$
$4\omega_{19}\omega_7\omega_{20}v_2^2v_3^2\omega_{12} - \omega_7\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{12} - 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_8v_3^2 - 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_8v_2^2 + 4\omega_{19}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{12} + 4\omega_{19}\omega_7c_s^2\omega_{14}\omega_5v_2^2\omega_{12} +$
$4\omega_{19}c_s^2\omega_{20}\omega_{14}\omega_5v_3^2\omega_{12} - 2\omega_{19}\omega_7c_s^2\omega_{14}\omega_8\omega_5v_2^2\omega_{12} + 8\omega_{19}\omega_{14}v_1\omega_5v_2v_3^2\omega_{12} - 4\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{12} + 2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{12} +$
$4\omega_{19}\omega_7\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7\omega_{14}\omega_8v_1v_2v_3^2\omega_{12} - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_{12} - 8\omega_{19}c_s^2\omega_{20}\omega_{14}v_1\omega_5v_2\omega_{12} + 2\omega_{19}c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{12} -$
$\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2 - \omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2 - 8\omega_{19}\omega_{20}\omega_{14}v_1\omega_5v_2v_3^2\omega_{12} + 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_5v_3^2\omega_{12} + 4\omega_{19}\omega_7\omega_{20}\omega_8v_2^2v_3^2\omega_{12} +$
$8\omega_{19}\omega_7\omega_{14}v_1v_2v_3^2\omega_{12} - 2\omega_{19}\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2\omega_{12} - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{12} + 8\omega_{19}c_s^2\omega_{14}v_1\omega_5v_2\omega_{12} - 2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_{12} -$
$4\omega_{19}\omega_7\omega_{20}\omega_8v_2^2v_3^2 - 4\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_5v_2^2v_3^2\omega_{12} + 2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_3^2 + 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{12} - 2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{12} +$
$2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2 + 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_3^2 + 4\omega_{19}\omega_7\omega_{20}\omega_5v_2^2v_3^2\omega_{12} - 4\omega_{19}\omega_7\omega_{20}\omega_8v_1\omega_5v_2v_3^2 + 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_5v_2^2\omega_{12} -$
$4\omega_{19}\omega_7\omega_{14}v_2^2v_3^2\omega_{12} + 8\omega_{19}\omega_7c_s^2\omega_{14}v_1v_2\omega_{12} - 4\omega_{19}\omega_7c_s^2\omega_{14}\omega_8v_1v_2\omega_{12} + 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2^2 + 2\omega_{19}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{12} - 4\omega_{19}\omega_{14}\omega_5v_2^2v_3^2\omega_{12} +$
$2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2 - 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5v_2 - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2^2\omega_{12} + 4\omega_{19}\omega_{20}\omega_{14}\omega_5v_2^2v_3^2\omega_{12} - \omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{12} -$
$\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5v_2^2v_3^2 + 2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{12} + 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}v_2^2\omega_{12} - 4\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{12} + \omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{12} -$
$4\omega_{19}c_s^2\omega_{14}\omega_5v_2^2\omega_{12} + 4\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2v_3^2\omega_{12} + 2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5v_2^2v_3^2 - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{12} - 8\omega_{19}\omega_7\omega_{20}\omega_8v_1v_2v_3^2\omega_{12} +$
$2\omega_{19}\omega_7c_s^2\omega_{14}\omega_8v_3^2\omega_{12} + 2\omega_{19}\omega_7c_s^2\omega_{14}\omega_8v_2^2\omega_{12} - 8\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}v_1v_2\omega_{12} - 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2 + 8\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{12} -$
$2\omega_{19}\omega_7c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{12} + \omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{12} + 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}v_3^2\omega_{12} - 4\omega_{19}c_s^2\omega_{14}\omega_5v_3^2\omega_{12} + 2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{12} -$
$8\omega_{19}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{12} - 8\omega_{19}\omega_7c_s^2\omega_{14}v_1\omega_5v_2\omega_{12} - \omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_2^2\omega_{12} + 4\omega_{19}\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{12})\frac{\rho}{4\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1v_1^2)\frac{\rho v_1v_2}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2} = (14c_s^2\omega^2v_3^2 + 2\omega^3v_1v_2v_3^2 - 36c_s^2\omega v_1^2 + 2c_s^2\omega^3v_1v_2 - c_s^2\omega^3v_3^2 + 24c_s^2v_1^2 + 14\omega^2v_1^2v_3^2 + 72c_s^2\omega v_1v_2 - 8c_s^4 - 48v_1v_2v_3^2 - 28\omega^2v_1v_2v_3^2 -$
$36\omega v_1^2v_3^2 - 28c_s^2\omega^2v_1v_2 - c_s^2\omega^3v_1^2 + 24c_s^2v_3^2 + 12c_s^4\omega - 4c_s^4\omega^2 + 24v_1^2v_3^2 - \omega^3v_1^2v_3^2 - 48c_s^2v_1v_2 + 72\omega v_1v_2v_3^2 - 36c_s^2\omega v_3^2 + 14c_s^2\omega^2v_1^2)\frac{\rho}{4\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2} = (-2\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{12} + 4\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{12} - 8\omega_7^2\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3v_3^2\omega_{12} +$
$2\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 - 4\omega_{19}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^3\omega_{12} + 8\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2\omega_{12} + 2\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$8\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5^3v_2\omega_{12} + 4\omega_{19}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5^3v_3^2\omega_{12} + 2\omega_{19}\omega_7^3\omega_{20}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{12} - 8\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{12} - 4\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^2 -$
$4\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{12} - 2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2 - 16\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3v_3^2\omega_{12} - 8\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5\omega_{12} -$
$4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{12} + 8\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{12} + 2\omega_{19}\omega_7^3c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{12} - 8\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{12} +$
$6\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{12} + 2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{12} + 2\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 4\omega_{19}\omega_7^3\omega_{20}\omega_8v_1^2\omega_5^3v_3^2\omega_{12} - 4\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_8\omega_5^2\omega_{12} -$
$2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{12} - 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8\omega_5^3v_3^2\omega_{12} + 2\omega_{19}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 8\omega_{19}\omega_7^2\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{12} + 8\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{12} +$
$2\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^3 + 6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{12} + 2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{12} + 8\omega_{19}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{12} + 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2 -$
$2\omega_7^3c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{12} - 12\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{12} + 4\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{12} + 8\omega_{19}\omega_7^3\omega_{20}\omega_8v_1\omega_5^3v_2v_3^2\omega_{12} - 2\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} +$
$4\omega_{19}\omega_7^3\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2 + 2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{12} + \omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2 - 8\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^3v_2\omega_{12} +$
$4\omega_{19}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^3v_3^2\omega_{12} + \omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{12} - 12\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 4\omega_{19}\omega_7^3c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{12} +$
$2\omega_{19}\omega_7^3\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{12} + 4\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 8\omega_{19}\omega_7^3\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} - 2\omega_7^3\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{12} - 8\omega_{19}\omega_7^2\omega_{14}\omega_8v_1\omega_5^3v_2v_3^2\omega_{12} +$
$4\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{12} - \omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{12} - 4\omega_{19}\omega_7^3\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{12} + 8\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{12} +$
$2\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} - 8\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2 + 2\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2\omega_{19}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$4\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{12} + \omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{12} + 4\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_8\omega_5^3\omega_{12} + 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_5^2v_3^2\omega_{12} +$
$4\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{12} - 8\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^3v_2\omega_{12} - 12\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{12} - 8\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} -$
$2\omega_{19}\omega_7^3c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{12} - 2\omega_{19}\omega_7^2\omega_{20}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{12} + 8\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^3v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7^3\omega_{14}\omega_8v_1^2\omega_5^3v_3^2\omega_{12} -$
$\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{12} + 4\omega_{19}\omega_7^3\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{12} + 4\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{12} +$
$4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{12} + 4\omega_{19}\omega_7^2\omega_{20}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{12} + 8\omega_{19}\omega_7^3\omega_{14}\omega_8v_1\omega_5^3v_2v_3^2\omega_{12} + 8\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3v_3^2\omega_{12} +$
$4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}v_1^2\omega_5^3\omega_{12} + 4\omega_{19}\omega_7^3\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} + 4\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{12} + 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2 + 8\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8v_1\omega_5^3v_2\omega_{12} -$
$2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2 + \omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2 + 2\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7^3\omega_{20}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{12} -$
$8\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{12} - 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_2\omega_{12} + 4\omega_{19}\omega_7^3c_s^4\omega_{14}\omega_8\omega_5^3\omega_{12} + 8\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} +$
$2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^3v_3^2\omega_{12} + 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{12} +$
$4\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} - 4\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} - 2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3v_3^2\omega_{12} + 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{12} - 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3 +$
$4\omega_{19}\omega_7^3\omega_{20}\omega_8^2v_1^2\omega_5^2v_3^2 + 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{12} - 4\omega_{19}\omega_7^3c_s^2\omega_{14}\omega_8v_1^2\omega_5^3\omega_{12} - 2\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2 - 16\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} -$

$$2\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{12} - 2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2 + 8\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^3v_3^2\omega_{12} - 2\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} + 8\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} -$$
$$2\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2 - 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_5^3v_3^2\omega_{12} - 8\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8v_1\omega_5^3v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_8\omega_5^3\omega_{12} - 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{12} -$$
$$2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2 + 4\omega_{19}\omega_7^3\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} + 4\omega_7^3c_s^2\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{12} + 8\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^3v_2\omega_{12} -$$
$$2\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_{19}\omega_7^3c_s^2\omega_{14}\omega_8v_1\omega_5^3v_2\omega_{12} - 4\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12} +$$
$$\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3 + 4\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8v_1^2\omega_5^3\omega_{12} - 2\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{12} - 2\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3v_3^2\omega_{12} +$$
$$4\omega_7^3\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^4\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} + \omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{12} + 4\omega_{19}\omega_7^3c_s^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} -$$
$$2\omega_{19}\omega_7^3\omega_{20}\omega_8^2v_1^2\omega_5^3v_3^2 - 2\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{19}\omega_7^2\omega_{20}\omega_8v_1\omega_5^3v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}v_1^2\omega_5^3\omega_{12} + 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2 -$$
$$8\omega_{19}\omega_7^3\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} + 4\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{12} + 8\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^3\omega_{12} + 4\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - \omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3v_3^2\omega_{12} -$$
$$4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_3^2\omega_{12} - 4\omega_{19}\omega_7^3\omega_{14}\omega_8^2v_1\omega_5^3v_2v_3^2\omega_{12} - 8\omega_{19}\omega_7^3\omega_{20}\omega_8^2v_1\omega_5^2v_2v_3^2 - 4\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{12} -$$
$$4\omega_{19}c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^3\omega_{12} + 8\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{12} - 2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2 - 2\omega_{19}\omega_7^3\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{12} - 4\omega_{19}\omega_7^3c_s^4\omega_{14}\omega_8\omega_5^2\omega_{12} -$$
$$4\omega_{19}\omega_7^3c_s^2\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^3v_2\omega_{12})\frac{\rho}{4\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2} = (4\omega_{19}\omega_7^2c_s^4\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{12} - 8\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5 - 2\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{12} +$$
$$4\omega_7^2\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} + 2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} - 2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2\omega_5\omega_{12} + 4\omega_{19}\omega_7^2\omega_{20}\omega_{14}v_1^2\omega_5^2v_3^2\omega_{12} -$$
$$8\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}v_1\omega_5^2v_2\omega_{12} + 8\omega_{19}\omega_7^2\omega_{20}v_1\omega_5^2v_2v_3^2\omega_{12} - 2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} + 8\omega_{19}\omega_7^2\omega_{20}\omega_8v_1\omega_5v_2v_3^2\omega_{12} +$$
$$4\omega_{19}\omega_7\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5^2v_3^2\omega_{12} - 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{12} - 4\omega_{19}\omega_7^2\omega_{14}v_1^2\omega_5^2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{14}v_1^2\omega_5^2\omega_{12} -$$
$$4\omega_7c_s^4\omega_{14}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{12} + 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{12} + 2\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_8\omega_5^2 +$$
$$4\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_5v_3^2\omega_{12} + 2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} - 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5 - 2\omega_{19}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}\omega_7c_s^4\omega_{14}\omega_8\omega_5^2\omega_{12} +$$
$$4\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2 + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2 - 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}v_1^2\omega_5\omega_{12} - 8\omega_{19}\omega_7c_s^2\omega_{14}v_1\omega_5^2v_2\omega_{12} +$$
$$8\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5v_2\omega_{12} - 4\omega_{19}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5v_3^2\omega_{12} + \omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2 - 4\omega_{19}\omega_7c_s^4\omega_{14}\omega_5^2\omega_{12} + 8\omega_{19}\omega_7c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} -$$
$$2\omega_{19}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} - 8\omega_{19}\omega_7^2c_s^2\omega_{14}v_1\omega_5v_2\omega_{12} - 4\omega_{19}\omega_7^2\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} + 4\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} +$$
$$2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_5^2v_3^2\omega_{12} - 4\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} + 4\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{19}\omega_7c_s^2\omega_{14}v_1^2\omega_5^2\omega_{12} -$$
$$4\omega_{19}\omega_7c_s^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} + 2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2v_3^2\omega_{12} + 2\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5^2\omega_{12} + 2\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} -$$
$$2\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2 + 8\omega_{19}\omega_7^2\omega_{14}v_1\omega_5^2v_2v_3^2\omega_{12} + 4\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_8\omega_5 + 8\omega_{19}\omega_7^2c_s^2\omega_{20}v_1\omega_5^2v_2\omega_{12} +$$
$$\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} - 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} - 4\omega_{19}\omega_7c_s^4\omega_{20}\omega_5^2\omega_{12} - 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2 + 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_5^2v_3^2\omega_{12} -$$
$$8\omega_{19}\omega_7^2\omega_{20}\omega_{14}v_1\omega_5^2v_2v_3^2\omega_{12} + \omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2v_3^2\omega_{12} + 4\omega_7c_s^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} - 8\omega_{19}\omega_7^2\omega_{20}\omega_8v_1\omega_5v_2v_3^2 +$$
$$2\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - \omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} + 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_5^2\omega_{12} - 2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8v_1^2\omega_5\omega_{12} +$$
$$4\omega_{19}\omega_7c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{12} - 2\omega_{19}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_5^2\omega_{12} - 4\omega_{19}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} +$$
$$4\omega_{19}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5v_3^2 - 8\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5v_2 + 4\omega_7\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5v_3^2 - 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5^2 +$$
$$4\omega_{19}\omega_7\omega_{14}v_1^2\omega_5^2v_3^2\omega_{12} - 2\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_8\omega_5\omega_{12} + 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} + 2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{12} -$$
$$2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} + 4\omega_{19}\omega_7^2\omega_{20}v_1^2\omega_5v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_5\omega_{12} + 8\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}v_1\omega_5^2v_2\omega_{12} - 8\omega_{19}\omega_7\omega_{14}v_1\omega_5^2v_2v_3^2\omega_{12} +$$
$$2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{12} + \omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} - 2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{12} - 4\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_5\omega_{12} -$$
$$8\omega_{19}\omega_7^2\omega_{20}v_1\omega_5v_2v_3^2\omega_{12} + 2\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} - 4\omega_{19}\omega_7c_s^2\omega_{14}\omega_8\omega_5^2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} + 4\omega_{19}\omega_7c_s^2\omega_{14}\omega_5^2v_3^2\omega_{12} +$$
$$4\omega_{19}\omega_7c_s^2\omega_{20}v_1^2\omega_5^2\omega_{12} + 4\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} - 2\omega_{19}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2v_3^2 + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2 + 4\omega_7c_s^2\omega_{14}\omega_8\omega_5^2v_3^2\omega_{12} -$$
$$2\omega_7^2c_s^2\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} - 8\omega_7\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} - 8\omega_{19}\omega_7^2c_s^2\omega_{20}v_1\omega_5v_2\omega_{12} + \omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{12} - 8\omega_{19}\omega_7c_s^2\omega_{20}v_1\omega_5^2v_2\omega_{12} -$$
$$2\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2v_3^2 + 4\omega_{19}\omega_7^2\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{12} + 2\omega_{19}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} -$$
$$\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{12} - 12\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_{12} + 4\omega_{19}\omega_7^2\omega_{20}\omega_8v_1\omega_5^2v_2v_3^2 + 2\omega_{19}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5\omega_{12} +$$
$$8\omega_{19}\omega_7\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{12} + 4\omega_7c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - \omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2\omega_{20}v_1^2\omega_5^2v_3^2\omega_{12} -$$
$$4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{12} - 2\omega_7^2\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{12} + \omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2 - 2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} + 8\omega_{19}\omega_7^2\omega_{20}\omega_{14}v_1\omega_5v_2v_3^2\omega_{12} -$$
$$4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{14}v_1^2\omega_5\omega_{12} + 4\omega_{19}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 8\omega_{19}\omega_7\omega_{20}\omega_{14}v_1\omega_5^2v_2v_3^2\omega_{12} - 2\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_{12} -$$
$$4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_5v_3^2\omega_{12} + 4\omega_{19}\omega_7^2\omega_{14}v_1^2\omega_5v_3^2\omega_{12} - 2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_3^2 - 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5^2v_2 - 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_5^2v_3^2\omega_{12} +$$
$$4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{12} + 4\omega_{19}\omega_7\omega_{20}v_1^2\omega_5^2v_3^2\omega_{12} - 8\omega_{19}\omega_7^2\omega_{14}v_1\omega_5v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7^2\omega_{20}\omega_{14}v_1^2\omega_5v_3^2\omega_{12} + 8\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{14}v_1\omega_5v_2\omega_{12} -$$
$$8\omega_{19}\omega_7\omega_{20}v_1\omega_5^2v_2v_3^2\omega_{12} - 4\omega_{19}\omega_7\omega_{20}\omega_{14}v_1^2\omega_5^2v_3^2\omega_{12} - 2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2 - 4\omega_{19}\omega_7^2c_s^4\omega_{14}\omega_5\omega_{12} + 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{12} -$$
$$2\omega_{19}\omega_7c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{14}\omega_5^2v_3^2\omega_{12} + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_5v_3^2\omega_{12} + 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{20}v_1^2\omega_5^2\omega_{12} +$$
$$2\omega_{19}\omega_7c_s^4\omega_{20}\omega_8\omega_5^2\omega_{12} + 8\omega_{19}\omega_7^2c_s^2\omega_{14}v_1\omega_5^2v_2\omega_{12} - 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2\omega_{12} + 2\omega_{19}\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2v_3^2\omega_{12})\frac{\rho}{8\omega_3^2\omega_4^2\omega_1^3\omega_5}$$

coefficient $C^{(2)}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2 \partial x_3^2}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = (\omega^3 v_1 v_2^2 - 24c_s^2 v_1 - 24 v_1 v_2^2 + 14\omega^2 v_1^2 v_2 - c_s^2\omega^3 v_2 + 36\omega v_1 v_2^2 + 36c_s^2\omega v_1 + 14c_s^2\omega^2 v_2 - 36c_s^2\omega v_2 - 14c_s^2\omega^2 v_1 - \omega^3 v_1^2 v_2 - 14\omega^2 v_1 v_2^2 + 24 v_1^2 v_2 + 24c_s^2 v_2 + c_s^2\omega^3 v_1 - 36\omega v_1^2 v_2)\frac{\rho v_3}{2\omega^3}$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = (2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{11}\omega_{14}\omega_8^2 v_1^2\omega_5 v_2\omega_{18}\omega_{12} - 2\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18}\omega_{12} +$$
$$4\omega_6^2\omega_{19}\omega_7^2\omega_{11}\omega_{14}\omega_8 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_{12} - 8\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 v_2\omega_{18}\omega_{12} +$$
$$4\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_{12} + \omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_{12} + \omega_6^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} +$$
$$\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18} + 4\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1\omega_5^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5 v_2\omega_{18} - 2\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_{12} +$$
$$4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5 v_2^2\omega_{18} - 4\omega_6^2\omega_{19}\omega_7\omega_{11}\omega_{14}\omega_8 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2 v_2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18}\omega_{12} -$$
$$4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 v_2\omega_{12} + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} +$$
$$2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5 v_2\omega_{18}\omega_{12} - 4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{12} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} + 4\omega_6^2\omega_7\omega_{11}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} +$$
$$4\omega_6^2\omega_{19}\omega_7\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8 v_1\omega_5\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1^2\omega_5 v_2\omega_{18} + 2\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 v_2\omega_{18}\omega_{12} - 2\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_{12} + 4\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} +$$
$$\omega_6^2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18} - \omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{11}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{18}\omega_{12} +$$
$$4\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_{12} - 2\omega_6^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} +$$
$$2\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 v_2\omega_{18}\omega_{12} + 4\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{12} - 4\omega_6\omega_{19} c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{11}\omega_{14}\omega_8 v_1\omega_5\omega_{18}\omega_{12} + 2\omega_6^2\omega_7^2 c_s^2\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1^2\omega_5 v_2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5 v_2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1\omega_5^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8 v_1\omega_5\omega_{18}\omega_{12} +$$
$$2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5\omega_{18} +$$
$$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 v_2\omega_{18} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1\omega_5^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5\omega_{18}\omega_{12} +$$
$$2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8 v_1\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5\omega_{18} +$$
$$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_{18} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18} +$$
$$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{12} - \omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 v_1^2\omega_5^2 v_2\omega_{18}\omega_{12} +$$
$$4\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_{12} + 2\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2 v_2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5 v_2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2\omega_{18} - 4\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_8 v_1\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_{12} + 4\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 v_2\omega_{18}\omega_{12} +$$
$$2\omega_6^2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}\omega_7^2\omega_{11}\omega_{14}\omega_8^2 v_1\omega_5 v_2^2\omega_{18}\omega_{12})\frac{\rho v_3}{2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = (-2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1^2 v_2 + 4\omega_{19}\omega_7\omega_{20}\omega_{14} v_1 v_2^2\omega_{12} + 4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_2 - 4c_s^2\omega_{14}\omega_8 v_1\omega_5\omega_{12} - 2\omega_{19}\omega_7\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} -$$
$$2\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_2\omega_{12} + \omega_7\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} + 4\omega_{19}\omega_7\omega_{20}\omega_8 v_1^2 v_2 - 4\omega_{19}\omega_7\omega_{20} v_1 v_2^2\omega_{12} - \omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 +$$
$$2c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5\omega_{12} - 4\omega_{19} c_s^2\omega_{20} v_1\omega_5\omega_{12} - 4\omega_{19}\omega_{20} v_1\omega_5 v_2^2\omega_{12} + 4\omega_{19} c_s^2\omega_{14}\omega_8 v_1\omega_5\omega_{12} + 4\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} + 4\omega_{19}\omega_7\omega_{14} v_1\omega_5 v_2^2\omega_{12} +$$
$$\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2\omega_{12} + 2\omega_7\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} - 2\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5\omega_{12} - 4\omega_{19}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} + 4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_{12} -$$
$$4\omega_{19}\omega_7 c_s^2\omega_{20} v_1\omega_{12} + 2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1 + 2\omega_{19}\omega_7\omega_{20}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 4\omega_{19}\omega_7\omega_{20}\omega_{14} v_1^2 v_2\omega_{12} + 4\omega_{19} c_s^2\omega_{14}\omega_5 v_2\omega_{12} + 4\omega_{19}\omega_7\omega_{20} v_1^2 v_2\omega_{12} -$$
$$4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} v_2\omega_{12} - \omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2\omega_{12} + 2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8\omega_5 v_2\omega_{12} - \omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} v_1\omega_5\omega_{12} +$$
$$2\omega_{19}\omega_{20}\omega_8 v_1\omega_5 v_2^2\omega_{12} - 2\omega_{19}\omega_{20}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 4\omega_{19}\omega_7 c_s^2\omega_{14} v_1\omega_{12} - 4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_5 v_2\omega_{12} + \omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} -$$
$$2\omega_{19} c_s^2\omega_{20}\omega_8\omega_5 v_2\omega_{12} + 4\omega_{19} c_s^2\omega_{20}\omega_{14} v_1\omega_5\omega_{12} + 2\omega_{19}\omega_7\omega_{14}\omega_8 v_1 v_2^2\omega_{12} - 2\omega_{19}\omega_7\omega_{20}\omega_8 v_1\omega_5 v_2^2\omega_{12} + 2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_2\omega_{12} +$$
$$4\omega_{19}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} - 2\omega_7\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 4\omega_{19}\omega_7\omega_{14} v_1^2\omega_5 v_2\omega_{12} + 4\omega_{19}\omega_7 c_s^2\omega_{14} v_1\omega_5\omega_{12} - 4\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} -$$
$$2\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_1\omega_5\omega_{12} + \omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2 - 2\omega_{19}\omega_7\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8\omega_5 v_2 + 2\omega_7 c_s^2\omega_{14}\omega_8 v_1\omega_5\omega_{12} +$$
$$4\omega_{19}\omega_{20} v_1^2\omega_5 v_2\omega_{12} - 2\omega_{19}\omega_7\omega_{20}\omega_8 v_1^2\omega_5 v_2 + 2\omega_{19}\omega_7\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} - \omega_7\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} + 4\omega_{19}\omega_7 c_s^2\omega_{14} v_2\omega_{12} - 2\omega_7 c_s^2\omega_{14}\omega_8\omega_5 v_2\omega_{12} +$$
$$2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5 - 2\omega_{19}\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} + 2\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2\omega_{12} - 2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_{12} - 4\omega_{19}\omega_7\omega_{20}\omega_8 v_1 v_2^2 +$$

$2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1 v_2^2 - 4\omega_{19}\omega_7 c_s^2\omega_{14}\omega_5 v_2\omega_{12} + 2\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8\omega_5 v_2\omega_{12} + 2\omega_{19} c_s^2\omega_{20}\omega_8 v_1\omega_5\omega_{12} - 4\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_5 v_2\omega_{12} -$
$4\omega_{19}\omega_{14} v_1\omega_5 v_2^2\omega_{12} - 4\omega_{19}\omega_{20}\omega_{14} v_1^2\omega_5 v_2\omega_{12} - 4\omega_{19}\omega_7\omega_{20}\omega_{14} v_1\omega_5 v_2^2\omega_{12} + 4\omega_{19}\omega_7 c_s^2\omega_{20} v_1\omega_5\omega_{12} + 4\omega_{19}\omega_7\omega_{20} v_1\omega_5 v_2^2\omega_{12} -$
$2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1\omega_5\omega_{12} - 4\omega_{19}\omega_7\omega_{20} v_1^2\omega_5 v_2\omega_{12} + 4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_5 v_2\omega_{12} - 2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_2 + 2\omega_{19}\omega_7\omega_{20}\omega_8 v_1\omega_5 v_2^2 +$
$2\omega_{19}\omega_7 c_s^2\omega_{14}\omega_8 v_1\omega_{12} + 4\omega_{19}\omega_7\omega_{20}\omega_{14} v_1^2\omega_5 v_2\omega_{12} - \omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1\omega_5 v_2^2 - 4\omega_{19}\omega_7\omega_{14} v_1 v_2^2\omega_{12} + 4\omega_{19}\omega_{20}\omega_{14} v_1\omega_5 v_2^2\omega_{12} -$
$4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_2\omega_{12} + 2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1^2 v_2\omega_{12} + 4\omega_{19}\omega_{14} v_1^2\omega_5 v_2\omega_{12} + \omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5\omega_{12} - 4\omega_{19} c_s^2\omega_{14} v_1\omega_5\omega_{12} -$
$4\omega_{19}\omega_7\omega_{20}\omega_8 v_1^2 v_2\omega_{12} - 4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_8 v_1 + 4\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14} v_1\omega_{12} + 4\omega_{19}\omega_7 c_s^2\omega_{20} v_2\omega_{12} - \omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1\omega_5\omega_{12} - 2\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} +$
$2\omega_{19} c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2\omega_{12} + 4c_s^2\omega_{14}\omega_8\omega_5 v_2\omega_{12} + 2\omega_{19}\omega_{20}\omega_{14}\omega_8 v_1^2\omega_5 v_2\omega_{12} - 2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2\omega_{12} + 4\omega_{19}\omega_7\omega_{20}\omega_8 v_1 v_2^2\omega_{12} +$
$4\omega_{19}\omega_7\omega_{14} v_1^2 v_2\omega_{12} + 4\omega_{19} c_s^2\omega_{20}\omega_5 v_2\omega_{12} + \omega_{19}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8\omega_5 v_2 - 2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8 v_1 v_2^2\omega_{12} - 4\omega_{19} c_s^2\omega_{14}\omega_8\omega_5 v_2\omega_{12})\frac{\rho v_3}{2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = (\omega_1 v_3^2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - \omega_2 v_3^2 - 3c_s^2\omega_2)\frac{\rho v_2 v_3}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (-36\omega v_1 v_2^2 v_3^2 - 36c_s^2\omega v_1 v_3^2 - 36c_s^2\omega v_1 v_2^2 - 24c_s^2 v_1^2 v_3 - 14\omega^2 v_1^2 v_2^2 v_3 - 24 v_1^2 v_2^2 v_3 + c_s^2\omega^3 v_2^2 v_3 + \omega^3 v_1^2 v_2^2 v_3 - 14c_s^2\omega^2 v_1^2 v_3 +$
$36c_s^2\omega v_2^2 v_3 - c_s^2\omega^3 v_1 v_2^2 - c_s^2\omega^3 v_1 v_3^2 + 24c_s^2 v_1 v_3^2 + 24c_s^2 v_1 v_2^2 + 24 v_1 v_2^2 v_3^2 + 14\omega^2 v_1 v_2^2 v_3^2 - 14c_s^2\omega^2 v_2^2 v_3 + 36c_s^2\omega v_1^2 v_2^2 v_3 + 36\omega v_1^2 v_2^2 v_3 +$
$14c_s^2\omega^2 v_1 v_3^2 - 24c_s^2 v_2^2 v_3 + 14c_s^2\omega^2 v_1 v_2^2 + c_s^2\omega^3 v_1^2 v_3 - \omega^3 v_1 v_2^2 v_3^2)\frac{1}{2\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5 v_2^2 v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} - 2\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} - 2\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_3\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} + \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_3 - 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5 v_2^2 v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2 v_2^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_3\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{15} -$
$\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_3\omega_{15} - 2\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2 v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1\omega_5 v_3^2\omega_{15} -$
$2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{15} + 2\omega_{19}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_3\omega_{15} -$
$2\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} + 2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2 v_3\omega_{15} + \omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_3\omega_{15} -$
$2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{15} + 2\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 v_1^2\omega_5^2 v_3\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1\omega_5 v_2^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5 v_3 + \omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2 v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{15} - 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2 v_2^2 v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2 v_3 + 2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_3\omega_{15} - 2\omega_{19}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2 v_3\omega_{15} +$
$2\omega_{19}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2 v_3 -$
$\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 v_1\omega_5^2 v_2^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2 v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17} v_1\omega_5^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1^2\omega_5 v_3 - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{15} +$
$2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_3 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5 v_2^2 v_3\omega_{15} -$
$8\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5^2 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1^2\omega_5 v_2^2 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2 v_3^2\omega_{15} - 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2 v_2^2 v_3\omega_{15} + 8\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5\omega_{15} +$
$2\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{15} + 2\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_3\omega_{15} -$
$2\omega_{19}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2 v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5 v_2^2 v_3^2 - \omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1\omega_5 v_2^2 v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_3\omega_{15} - \omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_3^2 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} -$
$\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 v_1^2\omega_5^2 v_2^2 v_3\omega_{15} - 8\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{15} -$
$4\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2 v_1\omega_{15} - 2\omega_{19}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{15} - \omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8 v_1\omega_5^2 v_2^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1^2\omega_5 v_3\omega_{15} + \omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5 v_2^2 v_3^2\omega_{15} -$
$2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3^2\omega_{15} + \omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3^2\omega_{15} -$

$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3 - 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{15} -$$
$$2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8v_1\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2v_3 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$$
$$2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} - 2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} + 2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2 - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2 +$$
$$\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2 + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_2^2v_3\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} - 2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2 +$$
$$2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2 + 4\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - 2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$$
$$\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_2^2 + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5v_3^2 + 2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_2^2\omega_{15} + 2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} +$$
$$2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$$
$$2\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2v_3 + \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2 + \omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5v_2^2 - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3^2 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{15} +$$
$$\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2 + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5v_2^2v_3\omega_{15} -$$
$$2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_2^2v_3 - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} -$$
$$2\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3 +$$
$$2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$$
$$8\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2 + \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} +$$
$$\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_3\omega_{15} - \omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2 +$$
$$2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2 +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + \omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} - \omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} +$$
$$2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2 - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5v_3\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2 + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$$
$$2\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2v_3 + \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2 + \omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2 - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3^2 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{15} +$$
$$\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2 + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5v_2^2v_3\omega_{15} -$$
$$2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_2^2v_3 - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} -$$
$$2\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3 +$$
$$2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$$
$$8\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2 + \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} +$$
$$\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3\omega_{15} - \omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$$
$$2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2 - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} + 2\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} -$$

$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{17}\omega_5v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{7}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}v_1v_2^2v_3^2\omega_{15} -$
$2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{17}v_1^2\omega_5v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_{7}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_8v_1v_2^2v_3^2 - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1\omega_5v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2 -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}v_1\omega_5v_2^2v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{7}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2v_3 +$
$\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{17}\omega_8v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_1\omega_5v_2^2v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_{7}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{15} - 2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} - 2\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3 + 2\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2 + 2\omega_{19}\omega_{10}\omega_{7}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{17}\omega_8v_1^2v_2^2v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3^2 - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5v_3\omega_{15} +$
$2\omega_{19}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} + \omega_{19}\omega_{7}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5v_2^2v_3\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3^2 - \omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3 +$
$2\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_{7}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1v_2^2 - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}v_1^2\omega_5v_3\omega_{15} -$
$2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3 -$
$2\omega_{19}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} +$
$2\omega_{19}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2 + 2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + 2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} +$
$2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}v_1\omega_5v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2 + \omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} +$
$2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{17}\omega_8v_1v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2 +$
$2\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1v_2^2\omega_{15} -$
$\omega_{16}\omega_{10}\omega_{7}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} + 2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_1\omega_5v_2^2v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2 +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1^2\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1^2v_3 -$
$2\omega_{19}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_{7}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_1^2\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}v_1^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} +$
$\omega_{16}\omega_{10}\omega_{7}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{15} -$
$2\omega_{19}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1\omega_5v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{15} -$
$\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3^2 +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{17}\omega_8v_1v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2 +$
$2\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}v_1v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1v_2^2\omega_{15} -$
$\omega_{16}\omega_{10}\omega_{7}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} + 2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_1\omega_5v_2^2v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2 +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3 -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{17}\omega_8v_1v_2^2\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_2^2v_3 + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} - \omega_{16}\omega_{10}\omega_{7}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{15} +$
$2\omega_{19}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{17}v_1^2v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_2^2v_3 +$
$\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}v_1v_2^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2 -$
$2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} - 2\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{17}\omega_8v_1v_3^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}v_1^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{15} - \omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2v_3 -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{17}v_1v_2^2\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_2^2 - 2\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1\omega_5v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2 +$
$\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{17}\omega_8v_1^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_1\omega_5v_2^2v_3^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}v_1v_3^2\omega_{15} -$
$2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{15} + \omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1v_2^2v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2v_3 +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_{7}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2v_3 - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} -$
$2\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_8v_1^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} + \omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_2^2v_3\omega_{15} -$
$\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_8v_1v_3^2 - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{17}v_1\omega_5v_2^2v_3^2\omega_{15} +$
$2\omega_{19}\omega_{10}\omega_{7}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3 -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1^2\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3^2 - 2\omega_{19}\omega_{16}\omega_{10}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2v_3\omega_{15} -$

$\omega_{19}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} v_1^2\omega_5 v_2^2 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 v_2^2 v_3\omega_{15} -$
$\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{17} v_1\omega_5 v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8\omega_5 v_2^2 v_3 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 v_1 v_2^2 + \omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} - 2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{15} +$
$\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17} v_1\omega_5 v_2^2\omega_{15} + 2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} + 2\omega_{16}\omega_{10} c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17} v_1\omega_5 v_3^2\omega_{15} +$
$2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1^2 v_2^2 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 v_1^2\omega_5 v_3\omega_{15} +$
$2\omega_{16}\omega_{10} c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} + 2\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 v_1^2\omega_5 v_3 - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20} v_2^2 v_3\omega_{15} -$
$\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} v_1 v_2^2 v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2 v_3^2 -$
$2\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_8 v_1^2\omega_5 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_5 v_2^2 v_3\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{17} v_1\omega_5 v_2^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} v_1^2\omega_5 v_2^2 v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2 v_3 + \omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17} v_1^2\omega_5 v_2^2 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10} c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2 v_3\omega_{15} +$
$2\omega_{19}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} - 2\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_2^2 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17} v_1\omega_5 v_2^2\omega_{15} -$
$2\omega_{19}\omega_{10} c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2 v_3\omega_{15} - 2\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2 v_3^2\omega_{15} + 2\omega_{19}\omega_{10}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15})\frac{1}{2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (-252\omega_4^2 c_s^4\omega_1^2\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3 v_3^2 - 432\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2 v_3^2 + 54\omega_3^2 c_s^2\omega_1^3\omega_2^3 + 32\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^2 + 8\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2 - 108\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^3 +$
$30\omega_3^2\omega_4^2 c_s^4\omega_1^3\omega_2^2 - 81\omega_3\omega_4^2 c_s^4\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2\omega_2^3 v_3^4 - 176\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^2 - 60\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^3 v_3^2 - 108\omega_3^2\omega_4 c_s^2\omega_1^2 v_1^2\omega_2^3 + 324\omega_3^2 c_s^4\omega_1^2\omega_2^3 +$
$32\omega_3^2\omega_4^2 c_s^2 v_1^2\omega_2^2 - 54\omega_4^2 c_s^2\omega_1^3\omega_2^3 - 104\omega_3^2\omega_4^2 c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 64\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 v_3^4 - 10\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^3 - 72\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2 -$
$432\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^2 v_3^2 - 24\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2 v_3^2 + 96\omega_3^2\omega_4^2\omega_1^3\omega_2 v_3^2 + 24\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3 v_1^2 v_3^2 + 112\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2 + 10\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^3 -$
$104\omega_3^2\omega_4^2 c_s^2\omega_1^3 + 108\omega_3\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^3 + 432\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_3^2 + 84\omega_4^2 c_s^2\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^2 - 10\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2^2 + 324\omega_3\omega_4^2 c_s^4\omega_1^2\omega_2^3 - 162\omega_3^2 c_s^4\omega_1^3\omega_2^3 -$
$24\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^2 - 54\omega_3^2 c_s^2\omega_1^3 v_1^2\omega_2^3 - 24\omega_3\omega_4^2 c_s^4\omega_1^3\omega_2 - 96\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^2 v_3^2 + 8\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2 c_s^2\omega_1^2\omega_2^3 + 192\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2^2 +$
$27\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^2\omega_2 v_3^4 + 162\omega_4^2 c_s^4\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2 v_1^2\omega_2^3 - 60\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2 v_3^2 - 192\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^2 + 80\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2 + 54\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^3 +$
$192\omega_3\omega_4^2 c_s^4\omega_1^2\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^3 + 64\omega_3\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^2 - 72\omega_4^2 c_s^4\omega_1^3\omega_2^2 - 432\omega_3^2\omega_4^2 c_s\omega_1\omega_2^3 v_3^2 - 8\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2 - 30\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2^3 -$
$8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2\omega_4^2 v_1^2\omega_2^3 v_3^2 - 168\omega_3^2\omega_4^2 c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_2^3 + 432\omega_3^2\omega_4^2 c_s^2\omega_2^3 v_3^2 + 144\omega_3^2\omega_4^2 c_s^4\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 v_3^2 - 16\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 -$
$56\omega_3\omega_4^2 c_s^2\omega_1 v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2\omega_4^2 c_s^4\omega_1\omega_2^3 + 27\omega_3^2\omega_4 c_s^2\omega_1^3 v_1^2\omega_2^3 + 108\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^3 - 8\omega_3\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2 + 96\omega_3^2\omega_4^2\omega_1\omega_2^2 v_3^2 -$
$168\omega_3\omega_4^2 c_s^4\omega_1\omega_3^3 - 432\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2 v_3^2 + 72\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^4 - 216\omega_3^2\omega_4^2 c_s^4\omega_1\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 81\omega_3^2\omega_4 c_s^4\omega_1^3\omega_3^2 + 32\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_1^2 +$
$10\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^2 - 96\omega_3^2\omega_4^2\omega_2^2 v_3^2 - 56\omega_3^2\omega_4^2 c_s^2\omega_1 v_1^2\omega_2^2 - 40\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2 + 48\omega_3^2\omega_4^2\omega_1^3 v_3^4 - 84\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^3 + 120\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 v_3^2 +$
$64\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^3 + 864\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^2 v_3^2 - 324\omega_3^2\omega_4 c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 36\omega_3^2\omega_4^2\omega_1^3\omega_2 v_3^4 + 144\omega_3^2\omega_4^2 c_s^4\omega_1^3 + 56\omega_3\omega_4^2 c_s^2\omega_1\omega_2^3 + 8\omega_3^2\omega_4^2 c_s^2\omega_1 v_1^2\omega_2^3 -$
$27\omega_3\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1\omega_2^3 v_3^2 + 128\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^2 + 108\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1^3 v_1^2 - 27\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^3)\frac{v_1}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} =$
$(12c_s^2\omega^3 v_1 v_3 + 84c_s^2\omega^2 v_3^2 + 84c_s^2\omega^2 v_2^2 + 144v_2^2 v_3^2 - 6\omega^3 v_2^2 v_3^2 - 6c_s^2\omega^3 v_2^2 - 216\omega v_2^2 v_3^2 - 6c_s^2\omega^3 v_3^2 - 36c_s^4 + 432\omega v_1 v_2^2 v_3 + 432c_s^2\omega v_1 v_3 + 12\omega^3 v_1 v_2^2 v_3 +$
$84\omega^2 v_2^2 v_3^2 + 144c_s^2 v_3^2 + 144c_s^2 v_2^2 + 54c_s^4\omega - 168c_s^2\omega^2 v_1 v_3 - 16c_s^4\omega^2 - 288v_1 v_2^2 v_3 - c_s^4\omega^3 - 168\omega^2 v_1 v_2^2 v_3 - 216c_s^2\omega v_3^2 - 216c_s^2\omega v_2^2 - 288c_s^2 v_1 v_3)\frac{\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = (-6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_3^2 - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_8\omega_5^2 v_3^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_8^2\omega_5^3 v_3^2\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5^3 v_3\omega_{15} + 18\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5 v_3^2\omega_{15} - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{15} -$
$24\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{20}\omega_8^2 v_1\omega_5^3 v_3\omega_{15} - 24\omega_6^2\omega_{19}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{15} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{15} +$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^4\omega_{20}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_8^2\omega_5^3 v_3^2 +$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1\omega_5^3 v_2^2 v_3\omega_{15} - 2\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{15} - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8 v_1\omega_5^3 v_2^2 v_3\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{15} - 24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} -$
$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{15} - 24\omega_6\omega_{19}\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3 v_2^2\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2 + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 v_2^2 v_3^2 -$
$6\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2 v_2^2 v_3^2\omega_{15} - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{15} -$
$6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_3^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{15} - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_{23} c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_8^2\omega_5^3 v_3^2\omega_{15} -$
$6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 v_2^2 v_3^2\omega_{15} - 24\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 v_2^2 v_3^2\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_7^3\omega_{23} c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 6\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_3^2\omega_{15} +$
$36\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{15} + 36\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{17}\omega_8^2\omega_5^3 v_2^2\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_2^2 v_3^2\omega_{15} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 v_3^2\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^2\omega_{17}\omega_8 v_1\omega_5^3 v_3\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^3 v_2^2 v_3\omega_{15} - 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$

$12\omega_6^2\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^3v_2^2v_3^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} + 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} - 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} -$
$12\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} - 24\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_3\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3v_2^2v_3^2 - 24\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3 - 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_3 - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} -$
$6\omega_6^2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - 18\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 36\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^3\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3v_2^2\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_3\omega_{15} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3 + 12\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} -$
$12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} - 48\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_2^3\omega_{15} + 12\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} - 24\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} +$
$6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 60\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_3\omega_{15} - 60\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^3v_3\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^3v_2^2v_3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^3v_3^2\omega_{15} -$
$18\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3v_3^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3^2\omega_{15} -$
$6\omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} +$
$6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2 + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_3^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^3v_2^2v_3^2\omega_{15} -$
$12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^3v_3\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^3v_2^2v_3\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^3v_3 - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^3v_2^2v_3^2\omega_{15} -$
$6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} + 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2 + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3 - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5^3v_3\omega_{15} + 6\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3v_2^2\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3^2\omega_{15} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} + 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_3 +$
$6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 24\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} +$
$12\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3v_2^2v_3^2\omega_{15} - 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2 -$
$12\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{15} + 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} -$
$12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3v_2^2v_3^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3^2\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 24\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} +$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^3\omega_{15} - 24\omega_6^2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3^2\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2 + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^3v_2^2v_3^2\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2 - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2 + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^3v_3^2\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^3v_3^2\omega_{15} + 10\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5^3v_2^2v_3\omega_{15} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^3v_2^2v_3 + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_3^2\omega_{15} -$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2 + 24\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^3v_3^2\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{15} +$
$6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2 +$
$24\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} -$
$24\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3 + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3 + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^3v_2^2v_3\omega_{15} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^3v_3\omega_{15} - 24\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3 - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3 -$
$\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2v_3^2\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3 + 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2 +$

$$42\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_2^2\omega_{15} -$$
$$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^3v_3\omega_{15} + 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2v_2^2\omega_{15} +$$
$$6\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2 + 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3v_3^2\omega_{15} +$$
$$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} - 24\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} + 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} -$$
$$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2 - 12\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} +$$
$$24\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_2^2v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{15} - 18\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$24\omega_6^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{15} +$$
$$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} + 6\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 24\omega_6^2\omega_{19}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} -$$
$$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} -$$
$$12\omega_6^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2v_3^2\omega_{15} - 24\omega_6^2\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^3v_3\omega_{15} - 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15} +$$
$$12\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^3v_3^2\omega_{15} + 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_3^2\omega_{15} + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3v_2^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15})\frac{\rho}{12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = (-12\omega_6\omega_{19}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2 -$$
$$24\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5v_2^2v_3^2\omega_{15} -$$
$$24\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2 + 12\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}v_1\omega_5^2v_3\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5^2v_3\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_5^2v_2^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 24\omega_6\omega_{19}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} - 18\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_1\omega_5^2v_2^2v_3\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} +$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - 24\omega_6\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} +$$
$$24\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - \omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2v_2^2v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_5^2\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} -$$
$$6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2 - 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} - 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}v_1\omega_5v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2 + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_3^2 + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3 +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_5^2v_3^2\omega_{15} - 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2 -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}v_1\omega_5v_2^2v_3\omega_{15} - 24\omega_6\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2v_2^2v_3^2 + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2 + 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2 +$$
$$12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 24\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_1\omega_5v_2^2v_3\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} - 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} - 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2 -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}v_1\omega_5^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2v_2^2v_3^2 +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} - 24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3 + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3 +$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2 + 12\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_5^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5v_2^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3 - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_5v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} - 12\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3 + 12\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} -$$
$$6\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} +$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}v_1\omega_5^2v_2^2v_3\omega_{15} -$$
$$18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} -$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_3^2\omega_{15} + 24\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2v_2^2\omega_{15} +$$
$$12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} -$$
$$12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{15} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} -$$
$$18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2v_3^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_5\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}v_1\omega_5^2v_2^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} +$$
$$24\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_5^2\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{15} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} +$$
$$12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_5v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_5\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_5^2v_2^2\omega_{15} -$$
$$24\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5 + 24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{15} -$$
$$6\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 24\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2v_2^2\omega_{15} +$$

$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_5^2v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$24\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{15} - 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}v_1\omega_5^2v_2^2v_3\omega_{15} + 10\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_5\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3 -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3 + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 12\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_5v_3^2\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{15} -$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} +$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3 -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} - 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_1\omega_5^2v_2^2v_3\omega_{15} -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3 - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} +$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5^2v_3\omega_{15} - 24\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} - 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} -$$
$$24\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_3^2\omega_{15} - 24\omega_6\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} +$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_5^2v_2^2v_3^2\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5v_2^2v_3^2\omega_{15} + 24\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_5v_2^2v_3^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}v_1\omega_5^2v_2^2v_3\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_5^2v_3^2\omega_{15} - 24\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5^2v_3^2\omega_{15} - 6\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5v_2^2v_3^2\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_3^2\omega_{15} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2 - 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}v_1\omega_5v_2^2v_3\omega_{15} -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_3^2 - 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} +$$
$$24\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} - 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3 + 6\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} +$$
$$12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5 + 12\omega_6\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2 -$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2 - 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}v_1\omega_5^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_3^2 +$$
$$12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2 -$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3^2 - 12\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_5^2v_3^2\omega_{15} - 6\omega_6\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3 -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2 + 6\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} -$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}v_1\omega_5v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5v_3\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5^2v_2^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2\omega_{15} -$$
$$24\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + 12\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$$
$$6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}v_1\omega_5^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{15} -$$
$$6\omega_6\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_5^2v_2^2\omega_{15} - 6\omega_6\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 6\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} +$$
$$24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3^2 + 24\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} -$$
$$12\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5v_2^2v_3^2 - 6\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2v_3^2\omega_{15} +$$
$$12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3 - 2\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} -$$
$$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2v_2^2v_3^2\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5\omega_{15})\frac{\rho}{12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}}$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D_xD_yD_z^2}v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D_xD_yD_z^2}v_1}$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D_xD_yD_z^2}v_1} = (-2\omega_3^3\omega_{13}\omega_1^2 - 12\omega_3^2\omega_1^2 - 12\omega_3^3\omega_1^2\omega_2 - 6\omega_3^2\omega_{13}\omega_1\omega_2 - 12\omega_3^3\omega_1 + 12\omega_3^3\omega_1^2 + 12\omega_3^3\omega_{13} + 24\omega_3\omega_{13}\omega_1^2\omega_2 - 12\omega_3^3\omega_2 - 12\omega_3^2\omega_1\omega_2 +$$
$$12\omega_3\omega_{13}\omega_1^2 - 6\omega_3^3\omega_{13}\omega_1 + 12\omega_3^2\omega_1^2\omega_2 - \omega_3^3\omega_{13}\omega_1^2\omega_2 + 12\omega_3\omega_{13}\omega_1\omega_2 - 6\omega_3^2\omega_{13}\omega_1^2 + 24\omega_3^3\omega_1\omega_2 - 2\omega_3^2\omega_{13}\omega_1^2\omega_2 - 24\omega_{13}\omega_1^2\omega_2)\frac{c_s^4\rho}{12\omega_3^3\omega_{13}\omega_1^2\omega_2}$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D_xD_yD_z^2}v_1} = (24\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2v_3^4 - 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2\omega_5\omega_2^2v_3^2 + 264\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 -$$
$$36\omega_3\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^2 - 216\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 - 24\omega_3\omega_4^2\omega_1^3\omega_5\omega_2v_3^4 - 54\omega_3^2\omega_1^3\omega_5\omega_2^3v_3^4 + 36\omega_3\omega_4\omega_1^3\omega_5\omega_2^2v_3^2 + 48\omega_3^2\omega_4^2\omega_1^3\omega_5v_3^4 - 24\omega_3^2\omega_4^2v_1^2\omega_5\omega_2^3 +$$
$$36\omega_3^2\omega_4\omega_1\omega_5\omega_2^3v_3^4 + 112\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 + 48\omega_3\omega_4^2c_s^4\omega_1^3v_1^2\omega_5\omega_2 + 36\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 - 216\omega_3^2\omega_4^2c_s^2\omega_5\omega_2^3v_3^2 - 648\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_5\omega_2^3 +$$
$$54\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^4 - 72\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 + 108\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3v_3^4 + 288\omega_3^2\omega_4c_s^2\omega_1\omega_5\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 - 468\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 - 54\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^3v_3^2 +$$
$$9\omega_3\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^3 + 27\omega_3^2\omega_4c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 - 180\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3v_3^2 + 48\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2v_3^2 - 84\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2v_3^2 + 24\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5 +$$
$$64\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^3 - 6\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 - 36\omega_3\omega_4\omega_1^2\omega_5\omega_2^3v_3^2 - 216\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 + 108\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 -$$
$$72\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^2 + 180\omega_3\omega_4^2c_s^2\omega_1\omega_5\omega_2^3v_3^2 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 + 12\omega_3\omega_4^2\omega_1\omega_5\omega_2^3v_3^4 + 264\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_3^2 + 162\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 -$$
$$96\omega_3^2\omega_4^2\omega_5\omega_2^3v_3^4 - 72\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^4 - 4\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 - 108\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^2v_3^2 - 12\omega_3\omega_4^2\omega_1^2\omega_5\omega_2^2v_3^2 + 72\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3 - 168\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^2 +$$
$$24\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 + 360\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2v_3^2 + 60\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 - 18\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 - 28\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 +$$
$$144\omega_3^2\omega_4\omega_1^2\omega_5\omega_2^3v_3^2 + 108\omega_3^2\omega_1^2\omega_5\omega_2^3v_3^4 - 180\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2v_3^2 - 9\omega_3^2\omega_4\omega_1^3\omega_5v_2^2\omega_2^3 + 54\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^2 + 108\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 -$$
$$288\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2v_3^2 - 180\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 - 36\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^2v_3^2 - 72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2v_3^4 + 288\omega_3^2\omega_4c_s^4\omega_1^2\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^2 -$$
$$60\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 + 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2v_3^2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 - 2\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 -$$
$$120\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^3 + 288\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 36\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^4 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2v_3^4 - 160\omega_3\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 + 12\omega_3\omega_4^2\omega_1^2\omega_5\omega_2^2v_3^4 +$$

$8\omega_3^2\omega_4^2\omega_1^3\omega_5 + 648\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 + 32\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5 + 18\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^4 + 64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2 - 216\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 - 144\omega_3^2\omega_4\omega_1^2\omega_5\omega_2^3v_3^4 +$
$72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 - 9\omega_3\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^3 + 180\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 - 108\omega_3^2\omega_4c_s^2\omega_1\omega_5\omega_2^3v_3^2 - 12\omega_3\omega_4^2\omega_1\omega_5\omega_2^3v_3^2 +$
$240\omega_3^2\omega_4^2c_s^2v_1^2\omega_5\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_5\omega_2^3v_3^2 + 72\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^2 - 112\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 - 27\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 -$
$288\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 - 288\omega_3^2\omega_4c_s^4\omega_1\omega_5\omega_2^3 - 72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5v_3^2 +$
$152\omega_3^2\omega_4^2c_s^4\omega_5\omega_2^3 + 36\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^2 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2v_3^2 - 24\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2v_3^2 - 108\omega_3^2\omega_1^2\omega_5\omega_2^3v_3^2 + 336\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^3 +$
$216\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 - 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5 - 54\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^4 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 36\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^2v_3^4 - 56\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^2 -$
$162\omega_3^2c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 - 108\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2v_3^2 - 96\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 -$
$18\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^4 - 348\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2v_3^2 + 132\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2v_3^2 + 108\omega_3\omega_4c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5 - 36\omega_3^2\omega_4\omega_1\omega_5\omega_2^3v_3^2 +$
$9\omega_3^2\omega_4\omega_1^3\omega_5v_2^4\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3\omega_5v_3^2 + 4\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 - 108\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 - 48\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 132\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^2 +$
$324\omega_3^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 + 16\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 - 24\omega_3^2\omega_4^2c_s\omega_1^2\omega_5\omega_2v_3^2 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 -$
$36\omega_3^2\omega_4\omega_1^2\omega_5\omega_2^2v_3^4 - 72\omega_3^2\omega_4c_s^4\omega_1^3\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^2 + 24\omega_3\omega_4^2\omega_1^3\omega_5\omega_2v_3^2 + 36\omega_3\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^4 + 54\omega_3^2\omega_1^3\omega_5\omega_2^3v_3^2 - 36\omega_3\omega_4\omega_1^3\omega_5\omega_2^2v_3^4 -$
$6\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 + 54\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^3v_3^4 - 288\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2v_3^4 + 162\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 - 162\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 +$
$36\omega_3\omega_4\omega_1^2\omega_5\omega_2^3v_3^4 + 216\omega_3^2\omega_4^2v_1^2\omega_5\omega_2^3v_3^2 - 6\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3 - 88\omega_3^2\omega_4^2c_s^2\omega_5\omega_2^3 + 72\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^4 - 54\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^2 + 160\omega_3\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 +$
$300\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3v_3^2 - 48\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3v_3^2 - 108\omega_3\omega_4c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 - 72\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2v_3^2)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = (-\omega^3v_1v_3^2 + c_s^2\omega^3v_3 - 14\omega^2v_1^2v_3 + 24c_s^2v_1 + 24v_1v_3^2 - 36c_s^2\omega v_1 - 14c_s^2\omega^2v_3 - 36\omega v_1v_3^2 + 14c_s^2\omega^2v_1 + \omega^3v_1^2v_3 + 36c_s^2\omega v_3 -$
$24v_1^2v_3 + 14\omega^2v_1v_3^2 - c_s^2\omega^3v_1 - 24c_s^2v_3 + 36\omega v_1^2v_3)\frac{\rho v_2}{\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = (-4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_3 - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} -$
$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 8\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_3\omega_{15} -$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} -$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3^2 + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_3 + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5v_3\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_3\omega_{15} - 8\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5 - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_3^2 - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_3\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5v_3 -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_3\omega_{15} - 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{15} - 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_3\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_3^2\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 8\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} -$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} -$
$\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_3 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5v_3^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5v_3 - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} - 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$
$9\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2 + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} +$
$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3 - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1\omega_5v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2 +$
$2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3\omega_{15} - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3 + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_3 +$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_3^2\omega_{15} - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2 -$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5v_3\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8v_1\omega_5^2v_3^2\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} - 4\omega_6\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} -$

$4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{15} - 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3 +$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} +$
$8\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_3^2 - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2 -$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} - 14\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} -$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_3 - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_3\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5^2\omega_{15} -$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5v_3^2 - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_3\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3 +$
$2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8v_1^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} -$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} -$
$8\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8v_1^2\omega_5^2v_3\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 4\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2 -$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} + 4\omega_6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3^2\omega_{15} - 4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_3\omega_{15} + 6\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_3^2\omega_{15} - 4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} + 4\omega_6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_3\omega_{15} - 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5\omega_{15} + 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_3\omega_{15} +$
$4\omega_6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_3\omega_{15} - 2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3 -$
$2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5)\frac{\rho v_2}{2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (-\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1 + 2\omega_{19}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_{15} - 2\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_1^2\omega_5v_3\omega_{15} - \omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}v_1\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_{15} - 2\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} - 2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} +$
$\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_5v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1^2v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} - \omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{15} - 2\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + \omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} - \omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_1^2\omega_5v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_3\omega_{15} + 2\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5 - \omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5 - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3 - \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5 + 2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_1\omega_5v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3 - \omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_3\omega_{15} +$
$2\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_5v_3\omega_{15} -$
$2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + \omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_5v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_3^2 -$
$2\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5v_3^2 + 2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} - 2\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1v_3^2 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_1\omega_5v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1 - 2\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} + 2\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + 2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_1\omega_5v_3^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} -$
$2\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + \omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + \omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_3 +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} - 2\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1\omega_5v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1\omega_5\omega_{15} + 2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_{15} + 2\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_5v_3\omega_{15} - 2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1^2\omega_5v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_3 - 2\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_3\omega_{15} + 2\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_1\omega_5v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3 + 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5 -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_5v_3\omega_{15} - 2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_3 +$
$2\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_3\omega_{15} +$
$2\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_3\omega_{15} -$

$2\omega_{19}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{15} - 2\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5 v_3\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{15} - 2\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_8 v_1^2\omega_5 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} v_1^2 v_3\omega_{15} - \omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_3\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 v_1 v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8 v_1^2\omega_5 v_3 - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20} v_1^2\omega_5 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} v_1^2 v_3\omega_{15} +$
$2\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8 v_1\omega_5 v_3^2\omega_{15} + \omega_{16}\omega_{10}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_3\omega_{15} + 2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5 v_3 +$
$2\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17} v_3\omega_{15} +$
$\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17} v_1^2\omega_5 v_3\omega_{15} + 2\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17} v_1\omega_5 v_3^2\omega_{15} - \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2 + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5 v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20} v_1\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1^2 v_3 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20} v_1 v_3^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 v_1\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 v_1^2 v_3 - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17} v_1 v_3^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8 v_3\omega_{15} - \omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8 v_1\omega_5\omega_{15} - 2\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5 v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8 v_3 +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8 v_1^2 v_3\omega_{15} + 2\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_3^2\omega_{15})\frac{\rho v_2}{\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (2\omega_3\omega_4\omega_1 v_1^2 - 6\omega_3\omega_4 c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4 c_s^2\omega_1 - 2\omega_3\omega_4 v_1^2\omega_2 - 27\omega_4 c_s^2\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_3\omega_1\omega_2 +$
$9\omega_3\omega_1 v_1^2\omega_2 - 9\omega_4\omega_1 v_1^2\omega_2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_1 v_2}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = (-2c_s^2\omega^3 v_1 v_3 - 14c_s^2\omega^2 v_2^2 + 36c_s^2\omega v_1^2 - 14\omega^2 v_1^2 v_2^2 + c_s^2\omega^3 v_2^2 - 24c_s^2 v_1^2 - 72\omega v_1 v_2^2 v_3 - 72c_s^2\omega v_1 v_3 - 2\omega^3 v_1 v_2^2 v_3 + 36\omega v_1^2 v_2^2 +$
$c_s^2\omega^3 v_1^2 - 24c_s^2 v_2^2 + 28c_s^2\omega^2 v_1 v_3 - 24v_1^2 v_2^2 + 48v_1 v_2^2 v_3 + 28\omega^2 v_1 v_2^2 v_3 - 14c_s^2\omega^2 v_1^2 + 36c_s^2\omega v_2^2 + \omega^3 v_1^2 v_2^2 + 48c_s^2 v_1 v_3)\frac{\rho}{2\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = (-\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} + \omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 -$
$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 + 4\omega_{19}^2\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} +$
$10\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2\omega_{15} - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5\omega_{15} +$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{15} -$
$2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2 + 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2 v_3\omega_{15} + 2\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} - 2\omega_{19}^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2 + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5 v_2^2 -$
$2\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1^2\omega_5^2\omega_{15} + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} +$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5 v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} - 4\omega_{19}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} -$
$\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} + \omega_{19}^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1^2\omega_5^2\omega_{15} - 4\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} -$
$2\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1^2\omega_5^2\omega_{15} - 2\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5 v_3\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1\omega_5 v_2^2 v_3\omega_{15} -$
$\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{15} - 4\omega_{19}^2\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} +$
$2\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2 v_2^2\omega_{15} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8 v_1\omega_5^2 v_3\omega_{15} + 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2 v_3\omega_{15} +$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15} + 2\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17} v_1\omega_5^2 v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 v_1\omega_5 v_3\omega_{15} + 4\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} +$
$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1\omega_5 v_3 + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{15} +$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2^2 + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1^2\omega_5 v_2^2\omega_{15} - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} -$
$4\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} - 2\omega_{19}^2\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} +$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5 v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2^2 +$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2 v_2^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3\omega_{15} + \omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2 -$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} + 4\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8 v_1\omega_5^2 v_2^2 v_3\omega_{15} +$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} - 2\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 v_1^2\omega_5^2 v_2^2\omega_{15} -$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5 v_2^2 v_3 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8 v_1^2\omega_5\omega_{15} +$
$4\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5 v_3\omega_{15} - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} -$
$\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8 v_1^2\omega_5^2\omega_{15} - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2 v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} + 2\omega_{19}^2\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2 v_2^2\omega_{15} +$
$2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1^2\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1\omega_5^2 v_3 - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} + 4\omega_{19}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} -$
$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2 v_1\omega_5 v_3\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1^2\omega_5^2 v_2^2\omega_{15} -$
$2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_3 + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8 v_1\omega_5 v_2^2 v_3\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5 v_2^2\omega_{15} +$
$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2 v_1\omega_5 v_2^2 v_3 + 4\omega_{19}^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5^2 v_2^2 v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} +$
$\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5 - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8 v_1^2\omega_5 v_2^2\omega_{15} + \omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 v_2^2\omega_{15} - 2\omega_{19}^2\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2\omega_5^2\omega_{15} -$

$$4\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{15} -$$
$$\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} - 2\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8v_1^2\omega_5^2v_2^2\omega_{15} -$$
$$\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5^2v_3\omega_{15} - 2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} -$$
$$\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_2^2\omega_{15} +$$
$$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3 + 4\omega_{19}^2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} +$$
$$2\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3 - 2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} -$$
$$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{15} + \omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} +$$
$$2\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} - 4\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} -$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8\omega_5^2v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2\omega_{15} +$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} -$$
$$2\omega_{19}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_5^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} -$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5 - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} +$$
$$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} -$$
$$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3 - 4\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5v_2^2\omega_{15} +$$
$$4\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} +$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} +$$
$$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5^2v_3\omega_{15} - 4\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1^2\omega_5v_2^2\omega_{15} +$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1^2\omega_5^2v_2^2\omega_{15} + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5v_2^2 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} -$$
$$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} +$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3\omega_{15} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3\omega_{15} +$$
$$2\omega_{19}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} - 2\omega_{19}^2\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} +$$
$$\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - 4\omega_{19}^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} +$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5\omega_{15} + 2\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2\omega_{15} - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} -$$
$$6\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3\omega_{15} + 4\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1\omega_5^2v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} +$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} +$$
$$4\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} - 4\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} -$$
$$\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} - 2\omega_{19}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15} -$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2\omega_{15} - 4\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} - 2\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2\omega_{15} +$$
$$4\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} - 2\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2\omega_{15} -$$
$$8\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} + 2\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} +$$
$$4\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} -$$
$$2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2 + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} - 2\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5^2v_2^2\omega_{15} -$$
$$8\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2v_2^2v_3\omega_{15} + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2 -$$
$$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_8^2\omega_5v_2^2 - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2 +$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15} -$$
$$\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2\omega_{15} + 4\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_8^2v_1^2\omega_5^2\omega_{15} +$$
$$4\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{15} + 4\omega_{19}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{15} + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} +$$
$$\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2 - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2\omega_5^2v_2^2\omega_{15})\frac{\rho}{2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} =$$
$$(4\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} + \omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_1^2v_2^2\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5v_3\omega_{15} +$$
$$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2 - \omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_1^2\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1v_2^2v_3\omega_{15} - \omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_1^2v_2^2\omega_{15} -$$
$$2\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$$
$$4\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_{15} - 4\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2 + 2\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 4\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} +$$
$$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2v_2^2\omega_{15} - 2\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_2^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}v_1\omega_5v_3\omega_{15} -$$
$$4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3 - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} -$$
$$4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3 + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5v_2^2\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}v_1\omega_5v_3\omega_{15} -$$
$$4\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1^2\omega_5v_2^2\omega_{15} + \omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} +$$
$$4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{15} - 2\omega_{19}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} +$$
$$\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2 - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_5v_2^2\omega_{15} + 4\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3 + 2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{15} - 4\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} +$$
$$2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 4\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3\omega_{15} +$$
$$4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}v_1v_3\omega_{15} - 2\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5 + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_5v_2^2\omega_{15} +$$
$$2\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} -$$
$$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1^2\omega_5\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}v_1v_3\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_1\omega_5v_2^2v_3\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1v_2^2v_3 +$$
$$2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + \omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$$

$4\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}v_1\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3 - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3 + 4\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3 +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} + \omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1v_2^2v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + 2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 4\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{15} - \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} -$
$2\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_5v_2^2\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} +$
$4\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1^2 - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}v_1^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} -$
$2\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3\omega_{15} - 2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1v_3\omega_{15} - 4\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} +$
$4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{15} - \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_5v_2^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} +$
$\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_2^2 -$
$4\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{15} -$
$4\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2v_2^2 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} +$
$2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3 + 4\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_2^2 - 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}v_1\omega_5v_3\omega_{15} +$
$2\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_5v_2^2\omega_{15} + 4\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 4\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} + 4\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + 4\omega_{19}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3\omega_{15} -$
$\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5 + 2\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} -$
$2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5 + 2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} +$
$4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2 -$
$4\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3\omega_{15} + 2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2 + 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1v_3 + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_5v_2^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_1\omega_5v_2^2v_3\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5v_2^2v_3 - 2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} -$
$2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_1\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} -$
$4\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2 + 4\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1\omega_5v_3 - 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_1\omega_5v_2^2v_3\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_2^2\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2 +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}v_1\omega_5v_3\omega_{15} - 2\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2 +$
$4\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_1^2\omega_5v_2^2\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 4\omega_{19}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} -$
$\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2v_2^2\omega_{15} - 2\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2 - 4\omega_{19}\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} + \omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_8v_1^2\omega_5 - \omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_5v_2^2\omega_{15} +$
$\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_2^2 + 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_1\omega_5v_2^2v_3\omega_{15} +$
$4\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3 - 4\omega_{19}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{20}\omega_{17}v_1^2\omega_5\omega_{15} - 2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} -$
$2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_1v_2^2v_3\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_1^2\omega_5v_2^2\omega_{15} +$
$\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} + 4\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{17}v_1^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{15} - \omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 2\omega_{16}\omega_{10}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$4\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_1v_2^2v_3\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5v_2^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1^2v_2^2\omega_{15})\frac{\rho}{2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = (-13\omega_3\omega_1\omega_2^3v_3^2 - 24\omega_3c_s^2\omega_1\omega_2^2 + 10\omega_3\omega_1^3\omega_2 - 4\omega_3\omega_1^2v_1^2\omega_2 - 2\omega_1^3v_1^2\omega_2 + 4\omega_3v_1^2\omega_2^3 - 20\omega_3\omega_1^2\omega_2^2 - 24\omega_3c_s^2\omega_1\omega_2^3 + 2\omega_1\omega_2^3 -$
$2\omega_1v_1^2\omega_2^3 + 28\omega_3c_s^2\omega_1^3 + 12c_s^2\omega_1^2\omega_2^2 + 14\omega_3\omega_1^2\omega_2 + 26\omega_3c_s^2\omega_2^3 - 4\omega_3\omega_1\omega_2^2v_3^2 - 6c_s^2\omega_1^3\omega_2 - 22\omega_3\omega_1^2\omega_2v_3^2 + 16\omega_3\omega_1^3v_3^2 + 6\omega_3\omega_1^2v_1^2\omega_2^2 + 4\omega_3\omega_1^3v_1^2 -$
$6c_s^2\omega_1\omega_2^3 - 30\omega_3c_s^2\omega_1^2\omega_2 + 26\omega_3\omega_1^2\omega_2^2v_3^2 - 3\omega_3\omega_1v_1^2\omega_2^3 - 4\omega_3\omega_1v_1^2\omega_2^2 - 3\omega_3\omega_1^3v_1^2\omega_2 + 10\omega_3\omega_2^3v_3^2 - 10\omega_3\omega_2^3 - 13\omega_3\omega_1^3\omega_2v_3^2 + 8\omega_3\omega_1\omega_2^2 -$
$24\omega_3c_s^2\omega_1^3\omega_2 + 2\omega_1^3\omega_2 + 4\omega_1^2v_1^2\omega_2^2 - 12\omega_3\omega_1^3 + 10\omega_3\omega_1\omega_2^3 + 48\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_1^2\omega_2^2)\frac{\rho v_1v_3}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (24 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 5c_s^2\omega^3 + 36\omega v_2^2 - 46c_s^2\omega^2 - 36\omega - 14\omega^2v_2^2 - 72c_s^2 - 24v_2^2 + \omega^3v_2^2)\frac{c_s^2v_2}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 - 36\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4 + 24\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}v_3^2 + 150\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4 - 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_3^2 -$
$12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}v_2^2v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^2v_2^2 - \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^2 + 18\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 +$
$36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3v_2^2v_3^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_2^2 - 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2 -$
$2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_2^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 - 96\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}c_s^4 + 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}c_s^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_3^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 -$
$36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_3^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2v_3^2 + 36\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_3^2 - 6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2v_3^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_3^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2 -$

$$36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4 - 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_2^2 + 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^4 + 36\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2v_3^2 +$$
$$12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3c_s^2 - 54\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}v_3^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2v_2^2 - 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}v_2^2v_3^2 - 12\omega_{16}^2\omega_{10}^3\omega_7^2v_3^2 -$$
$$36\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 + 12\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2v_2^2 + 12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_2^2 + 6\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_2^2 + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_2^2v_3^2 +$$
$$12\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}c_s^4 - 72\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2v_2^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2v_3^2 -$$
$$18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2 + 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^4 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2v_2^2 - 36\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2v_3^2 - 42\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^4 +$$
$$12\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}v_2^2v_3^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2 - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_3^2 + 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2v_3^2 - 36\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_3^2 + 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2 +$$
$$36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}v_2^2v_3^2 + 72\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 + 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}v_3^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^2 - 88\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^4 -$$
$$72\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_3^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^3v_3^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_2^2 - 12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 12\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3v_3^2 -$$
$$12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2 + 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}v_3^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 - 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_2^2v_3^2 -$$
$$12\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}v_2^2v_3^2 - 42\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^4 - 36\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}c_s^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2 - 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2v_3^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2v_3^2 -$$
$$18\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_3^2 - 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2v_2^2 + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_3^2 - 18\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_3^2 + 12\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2v_3^2 +$$
$$18\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^4 + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_3^2 - 12\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}v_2^2v_3^2 -$$
$$48\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4 - 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}c_s^2v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_3^2 + 36\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 - 6\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^2v_2^2 + 36\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^4 -$$
$$36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3c_s^2v_3^2 + 180\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^4 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2v_2^2v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2v_2^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4 +$$
$$18\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4 + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_2^2v_3^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2v_3^2 + 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^4 + 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_2^2v_3^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2 -$$
$$12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3c_s^2v_2^2 + 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}v_3^2 - 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2v_3^2 + 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_3^2 +$$
$$\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^2v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 - 84\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^4 + 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2v_3^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4 + 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2v_2^2 -$$
$$36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}v_3^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}v_3^2 + 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_2^2v_3^2 + 108\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2v_3^2 +$$
$$12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^2v_2^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2v_3^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2v_3^2 + 5\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^4 -$$
$$12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2v_3^2 - 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3c_s^4 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2v_2^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3v_3^2 +$$
$$36\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}c_s^2v_3^2 + 30\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^4 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 + 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}c_s^4 + 12\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}c_s^2v_2^2 + 72\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2v_3^2 +$$
$$12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_3^2 - 18\omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 + 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2 - 24\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}v_2^2v_3^2)\frac{v_2}{12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (6\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} - 12\omega_{16}^2\omega_{10}^3\omega_7 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_{23}v_2^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7c_s^2 +$$
$$54\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2 - 36\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2 + 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}v_2^2 + 36\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23}v_2^2 -$$
$$12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 - 6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 + 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2v_2^2 -$$
$$6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_2^2 + 54\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7 + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} -$$
$$12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7v_2^2 - 36\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23} - 36\omega_{19}\omega_{16}\omega_{10}^3\omega_{23}c_s^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2 - 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^2 -$$
$$18\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 40\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} - 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} -$$
$$36\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7 - 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 -$$
$$2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 + 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7c_s^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}v_2^2 + 36\omega_{16}^2\omega_{10}^3\omega_7c_s^2 + 12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}v_2^2 - \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} - 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} +$$
$$6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 - 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{10}^3\omega_7\omega_{23} - 12\omega_{19}\omega_{10}^3\omega_7\omega_{23}v_2^2 + 5\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2 + 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 +$$
$$36\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2 + 12\omega_{16}^2\omega_{10}^3\omega_7v_2^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}c_s^2 + 18\omega_{16}^2\omega_{10}^2\omega_{23}c_s^2 - 6\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 +$$
$$12\omega_{19}\omega_{16}^3\omega_{10}\omega_7v_2^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^2 - 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23} + \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}v_2^2 + 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} +$$
$$12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} + 54\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_{23} - 36\omega_{19}\omega_{10}^3\omega_7\omega_{23}c_s^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2)\frac{c_s^2v_2}{12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}}$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-12\omega_{11}\omega_5^3v_2^2 + 5\omega_3^2c_s^2\omega_{11}^2\omega_5^3 + 36\omega_3^2c_s^2\omega_{11}^2 - 36c_s^2\omega_{11}^2\omega_5^2 + 12\omega_3^2c_s^2\omega_{11}^2\omega_5^2 + 36c_s^2\omega_{11}^2\omega_5^3 - 6\omega_3^2\omega_{11}\omega_5^3v_2^2 + 6\omega_3\omega_{11}^2\omega_5^2v_2^2 -$$
$$36\omega_3^2c_s^2\omega_5^2 + 12\omega_3\omega_5^3 - 18\omega_3^2\omega_{11}^2\omega_5v_2^2 + 12\omega_3^2\omega_{11}^2v_2^2 - 12\omega_3\omega_5^3v_2^2 - 54\omega_3^2c_s^2\omega_{11}^2\omega_5 + 36\omega_3c_s^2\omega_{11}\omega_5^2 - 6\omega_3^2\omega_{11}\omega_5^2 + 12\omega_3\omega_{11}^2\omega_5^3 - 12\omega_3\omega_{11}^2\omega_5^3v_2^2 +$$
$$12\omega_{11}\omega_5^3 + 36\omega_3^2c_s^2\omega_5^3 + 6\omega_3^2\omega_{11}\omega_5^2v_2^2 - 6\omega_3\omega_{11}^2\omega_5^2 + 6\omega_3^2\omega_{11}\omega_5^3 + 54\omega_3c_s^2\omega_{11}\omega_5^3 - 12\omega_{11}^2\omega_5^3 + 12\omega_3^2\omega_5^2 - \omega_3^2\omega_{11}^2\omega_5^3 - 40\omega_3c_s^2\omega_{11}^2\omega_5^3 - 12\omega_3\omega_{11}\omega_5^2 -$$
$$12\omega_{11}^2\omega_5^2v_2^2 + 12\omega_3^2\omega_5^3v_2^2 - 12\omega_3^2\omega_5^3 - 36\omega_3c_s^2\omega_5^3 + 12\omega_{11}^2\omega_5^2 + 4\omega_3^2\omega_{11}^2\omega_5^2v_2^2 + 18\omega_3\omega_{11}\omega_5^3v_2^2 - 18\omega_3\omega_{11}\omega_5^3 + 18\omega_3c_s^2\omega_{11}^2\omega_5^2 - 4\omega_3^2\omega_{11}^2\omega_5^2 +$$
$$18\omega_3^2c_s^2\omega_{11}\omega_5^2 - 12\omega_3^2\omega_5^2v_2^2 + 12\omega_{11}^2\omega_5^3v_2^2 - 12\omega_3^2\omega_{11}^2 + 18\omega_3^2\omega_{11}^2\omega_5 - 36c_s^2\omega_{11}\omega_5^3 - 18\omega_3^2c_s^2\omega_{11}\omega_5^3 + 12\omega_3\omega_{11}\omega_5^2v_2^2 + \omega_3^2\omega_{11}^2\omega_5^3v_2^2)\frac{c_s^2v_2}{12\omega_3^2\omega_{11}^2\omega_5^3}$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-72\omega_4^2c_s^4\omega_1^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1^3v_2^3 - 20\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 27\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_4^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 4\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 - 28\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 -$$
$$36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 35\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 60\omega_3^2\omega_4^2\omega_2^3v_4^3 - 16\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3v_2^2 - 24\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 -$$
$$18\omega_4^2c_s^2\omega_1^3\omega_2^3 + 4\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 20\omega_3^2\omega_4^2c_s^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 15\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 32\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 + 72\omega_3^2\omega_4^2\omega_1\omega_2^3v_4^3 + 66\omega_3^2\omega_4^2\omega_1^3\omega_2v_2^3 +$$
$$4\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 12\omega_4^2c_s^2\omega_1^3\omega_2^2 - 36\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 74\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 27\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^2 + 49\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 9\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 + 60\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2v_3^2 -$$
$$52\omega_3^2\omega_4^2c_s^2\omega_1^3 - 8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 216\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 24\omega_4^2c_s^2\omega_2^3 - 28\omega_3\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 - 25\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 108\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 -$$
$$12\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 138\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 3\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 54\omega_4^2c_s^4\omega_1^3\omega_2^3 +$$
$$16\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 - 24\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 - 4\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 96\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 3\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3 - 9\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2 +$$
$$8\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 324\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 - 119\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 - 102\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 36\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^4 + 4\omega_3^2\omega_4^2\omega_2^3 - 216\omega_3^2\omega_4^2c_s^2\omega_2^3v_3^2 -$$
$$30\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3v_3^2 + 4\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 12\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 18\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 + 12\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 36\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 4\omega_3^2\omega_4^2v_2^2\omega_2^3 -$$
$$4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 78\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 32\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 - 12\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2v_3^2 + 18\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 + 12\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 -$$
$$84\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 324\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 36\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^4 - 72\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 4\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 - 138\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 -$$
$$27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_2^3v_3^2 + 16\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 30\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^3v_3^4 + 16\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 - 27\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^2 -$$
$$48\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2v_3^2 - 58\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 36\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3 - 36\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^4 + 72\omega_3^2\omega_4^2c_s^4\omega_1^3 + 28\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 -$$

$27\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^4 - 32\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 + 36\omega_3^2\omega_4^2v_2^2\omega_2^3v_3^2 - 42\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 + 28\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_2^2v_3^2)\frac{v_2}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = (-24 - 18c_s^2\omega - 12\omega^2 - c_s^2\omega^3 - 108\omega v_2^2 + 8c_s^2\omega^2 + 36\omega + 36\omega^2v_2^2 + 12c_s^2 + 72v_2^2)\frac{c_s^2\rho}{12\omega^3}$$

$$\begin{aligned}C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = {} & (6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4 + 24\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}v_3^2 + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_3^2 - \\ & 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}v_2^2v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_3^2 + 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^2v_2^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^2v_3^2 - \\ & 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3v_2^2v_3^2 + 18\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_2^2 - 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_3^2 + 60\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2 - \\ & 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_2^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}c_s^4 - 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_3^2 + \\ & 18\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2v_3^2 + 12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_3^2 - 18\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2v_3^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_3^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2 + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4 + \\ & 24\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_2^2 + 12\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2v_3^2 + 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3c_s^2 - 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_3^2 - \\ & 12\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}v_3^2 + 84\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2v_2^2 - 36\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}v_2^2v_3^2 - 12\omega_{16}^2\omega_{10}^3\omega_7^2v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^4 - 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 + \\ & 36\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2v_2^2 - 48\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}c_s^2v_2^2 + 72\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_2^2v_3^2 - \\ & 108\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2 - 24\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2v_3^2 + 72\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2 - \\ & 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^4 + 60\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2v_3^2 - \\ & 24\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^4 + 36\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}v_2^2v_3^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2 - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_3^2 + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_3^2 + \\ & 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2 + 108\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}v_2^2v_3^2 + 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 + 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}v_3^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^2 - \\ & 4\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^4 - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_3^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^3v_3^2 + 180\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_2^2 - 12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3v_2^2 - \\ & 144\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}v_3^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 - 36\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_2^2 + 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_2^2v_3^2 - 36\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}v_2^2v_3^2 - \\ & 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^4 - 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}c_s^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2 - 54\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2v_3^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2v_2^2 + 24\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2 + \\ & 12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_3^2 - 18\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2v_2^2 + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_3^2 - 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2v_3^2 + 36\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2v_3^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2v_3^2 - \\ & 36\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^4 + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_3^2 + 36\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}v_2^2v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4 + 24\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}c_s^2v_2^2 + \\ & 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_3^2 + 12\omega_{16}^2\omega_{10}^3\omega_7^2c_s^4 + 78\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^2v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3c_s^2v_3^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^4 + 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2v_2^2v_3^2 - \\ & 42\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2v_2^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3c_s^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4 + 6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4 + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_2^2v_3^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2v_3^2 + \\ & 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2c_s^4 + 18\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_2^2v_3^2 - 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3c_s^2v_2^2 + 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3c_s^2v_3^2 - 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2v_3^2 + \\ & 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^4 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2v_3^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4 - 132\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2v_2^2 - \\ & 36\omega_{19}\omega_{16}^3\omega_{10}^3\omega_7^2\omega_{23}v_3^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}v_3^2 + 72\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_2^2v_3^2 + 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2v_3^2 + \\ & 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2v_2^2 - 36\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2v_3^2 - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - 72\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2v_3^2 - \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^4 - \\ & 36\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3c_s^4 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_2^2 + 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2v_3^2 - \\ & 84\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2v_2^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3v_3^2 + 12\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}c_s^2v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^4 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2 - 24\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}c_s^2v_2^2 + \\ & 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2v_3^2 - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_3^2 - 6\omega_{16}^2\omega_{10}^3\omega_7^3c_s^4 - 72\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}v_2^2v_3^2)\frac{\rho}{12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}}\end{aligned}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2}$$

$$\begin{aligned}C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = {} & (-36\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}\omega_{10}^2\omega_7\omega_{23} - 6\omega_{16}\omega_{10}^2\omega_7^3c_s^2 - 12\omega_{19}\omega_{10}^2\omega_7^2 + 36\omega_{16}\omega_{10}^2\omega_7^2v_2^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_2^2 - \\ & 72\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 + 12\omega_{19}\omega_{10}\omega_7^3c_s^2 - 36\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 72\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}\omega_{10}\omega_7^2\omega_{23} + \\ & 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}^2\omega_7^3 - 36\omega_{19}\omega_{10}\omega_7^3\omega_{23}v_2^2 + 36\omega_{19}\omega_{10}\omega_7^3v_2^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2 - 24\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - \omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2 - \\ & 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2 - 18\omega_{16}\omega_{10}^2\omega_7^3v_2^2 - 12\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 + 12\omega_{19}\omega_{10}\omega_7^3\omega_{23} - 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 - \\ & 24\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 24\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3 + 12\omega_{19}\omega_{10}^2\omega_7\omega_{23}c_s^2 + 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2 - 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_2^2 + \\ & 12\omega_{19}\omega_{10}^2\omega_7^2c_s^2 - 36\omega_{19}\omega_{10}^2\omega_7^3v_2^2 + 36\omega_{19}\omega_{10}\omega_7^2\omega_{23}v_2^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2 + 18\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} + \\ & 36\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}v_2^2 - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 18\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2 - 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23} + \\ & 6\omega_{16}\omega_{10}^2\omega_7^3 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}\omega_7^3 + 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}^2\omega_7^3c_s^2 + 36\omega_{19}\omega_{10}^2\omega_7^2v_2^2 + 12\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2 + \\ & 36\omega_{19}\omega_{10}^2\omega_7\omega_{23}v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^2 + 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_{23}c_s^2 + 24\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} - 4\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - \\ & 36\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2 - 12\omega_{16}\omega_{10}^2\omega_7^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23} + 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2 + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23})\frac{c_s^2\rho}{12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}}\end{aligned}$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2}$$

$$\begin{aligned}C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = {} & (36\omega_3\omega_5^2v_2^2 - 36\omega_3\omega_{11}\omega_5v_2^2 + 72\omega_3^2\omega_5v_2^2 - 12\omega_3^2\omega_{11}\omega_5 - 12\omega_3c_s^2\omega_{11}\omega_5 + 24\omega_3^2c_s^2\omega_5 + 36\omega_3^3v_2^2 - 24\omega_3^2c_s^2\omega_5^2 + 18\omega_3c_s^2\omega_{11}\omega_5^2 + \\ & 12\omega_3^3c_s^2 - 12\omega_3\omega_5^2 + 36\omega_3^3\omega_5^2v_2^2 - 12\omega_3^2c_s^2\omega_{11} - 12\omega_3^3 - 24\omega_3^3c_s^2\omega_5 + 36\omega_3^2\omega_{11}\omega_5v_2^2 + 12\omega_3c_s^2\omega_5^2 + 24\omega_3^2\omega_5^2 - 72\omega_3^3\omega_5v_2^2 + 24\omega_3^3\omega_5 - \omega_3^3c_s^2\omega_{11}\omega_5^2 + \\ & 12\omega_3^2c_s^2\omega_{11}\omega_5 + 12\omega_3^2\omega_{11} - 36\omega_3^2\omega_{11}v_2^2 - 4\omega_3^2c_s^2\omega_{11}\omega_5^2 - 72\omega_3^2\omega_5^2v_2^2 - 12\omega_3^3\omega_5^2 + 12\omega_3\omega_{11}\omega_5 + 12\omega_3^3c_s^2\omega_5^2 - 12c_s^2\omega_{11}\omega_5^2 - 24\omega_3^2\omega_5)\frac{c_s^2\rho}{12\omega_3^3\omega_{11}\omega_5^2}\end{aligned}$$

$$\begin{aligned}C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = {} & (90\omega_3\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 + 76\omega_3^2\omega_4c_s^4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 18\omega_4\omega_1^2\omega_2^3v_3^4 + 54\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 + 12\omega_3^2\omega_4\omega_2^3v_3^2 + \\ & 18\omega_3^2\omega_1^2\omega_2^2v_3^2 + 48\omega_3^2\omega_4c_s^2\omega_1v_2^2\omega_2^3 + 12\omega_3^2\omega_4\omega_1v_2^2\omega_2^2 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 108\omega_3^2\omega_4c_s^2\omega_2^3v_3^2 + 6\omega_3\omega_4\omega_1^2\omega_2^2v_3^4 + 18\omega_3\omega_1^2\omega_2^3v_3^4 + 12\omega_3^2\omega_4\omega_1^3v_2^2\omega_2 - \\ & 12\omega_3^2\omega_4c_s^2\omega_1\omega_2^2v_3^2 + 24\omega_3^2\omega_4\omega_1^3v_3^4 - 90\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 18\omega_3\omega_1^3\omega_2^2v_3^2 - 18\omega_3\omega_4c_s^2\omega_1\omega_2^3v_3^2 - 18\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^4 - 28\omega_3^2\omega_4c_s^4\omega_1\omega_2^2 + \\ & 16\omega_3^2\omega_4c_s^4\omega_1^3 - 216\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 8\omega_3\omega_4c_s^4\omega_1\omega_2^3 - 12\omega_3^2\omega_4c_s^2\omega_1^2\omega_2v_3^2 + 36\omega_3^2\omega_4\omega_1\omega_2^2v_3^2 - 6\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2 + 18\omega_4\omega_1^3\omega_2^2v_3^2 + 12\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 - \\ & 54\omega_3^2c_s^2\omega_1^2\omega_2^2v_3^2 - 84\omega_3^2\omega_4c_s^2\omega_1v_2^2\omega_2^2 - 36\omega_3\omega_4\omega_1^2\omega_2^3v_3^4 - 18\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 150\omega_3^2\omega_4c_s^2\omega_1\omega_2^3v_3^2 + 6\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 18\omega_3^2\omega_1\omega_2^3v_3^4 -\end{aligned}$$

$12\omega_3\omega_4\omega_1^3\omega_2 v_3^4 + 18\omega_3^2 c_s^4\omega_1^3\omega_2^3 - 96\omega_3^2\omega_4 c_s^2 v_2^2\omega_2^3 - 68\omega_3^2\omega_4 c_s^4\omega_2^3 - 9\omega_3^2\omega_4\omega_1^3\omega_2^2 v_3^2 + 24\omega_3\omega_4 c_s^2\omega_1^3 v_2^2\omega_2 + 72\omega_3^2 c_s^2\omega_1^2\omega_2^3 + 18\omega_3^2\omega_1^2\omega_2^3 v_3^2 +$
$54\omega_3 c_s^2\omega_1^2\omega_2^3 v_3^2 - 4\omega_3^2\omega_4\omega_1\omega_2^3 - \omega_3^2\omega_4\omega_1^2 v_2^4\omega_2^3 - 12\omega_3^2\omega_4 v_2^2\omega_2^3 - 6\omega_3\omega_4\omega_1\omega_2^3 v_3^2 + 30\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^2 v_3^2 - 54\omega_3^2 c_s^2\omega_1^2\omega_2^3 v_3^2 + 72\omega_3^2\omega_4\omega_1^3 v_2^2 v_3^2 +$
$4\omega_3^2\omega_4\omega_2^3 + 18\omega_3^2\omega_1^3\omega_2^2 v_3^4 - \omega_3^2\omega_4\omega_1^3 v_2^2\omega_2^2 + 32\omega_3^2\omega_4 c_s^2\omega_1\omega_2^2 - 24\omega_3^2\omega_4\omega_1\omega_2^3 v_3^2 - 8\omega_3\omega_4 c_s^2\omega_1\omega_2^3 + 180\omega_3^2\omega_4\omega_1^2 v_2^2\omega_2^2 v_3^2 - 9\omega_3^2\omega_4\omega_1^2\omega_2^3 v_3^4 +$
$108\omega_3^2\omega_4 v_2^2\omega_2^3 v_3^2 + 60\omega_3\omega_4 c_s^2\omega_1 v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3\omega_2 v_3^4 - 4\omega_3^2\omega_4\omega_1\omega_2^2 + 54\omega_4 c_s^2\omega_1^2\omega_2^3 v_3^2 - 36\omega_3\omega_4\omega_1^3\omega_2^2 v_3^2 - 48\omega_3^2\omega_4 c_s^2\omega_1^2 v_2^2\omega_2 -$
$174\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2 v_3^2 + 54\omega_3^2 c_s^2\omega_1^3 v_2^2\omega_2^3 - 18\omega_3^2\omega_1^2\omega_2^3 v_3^4 - 36\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^2 + 54\omega_3^2 c_s^2\omega_1^3\omega_2^2 v_3^2 + 18\omega_3\omega_4 c_s^4\omega_1^3\omega_2^3 - 30\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^3 v_3^2 -$
$20\omega_3^2\omega_4 c_s^2\omega_1^3 + 6\omega_3\omega_4\omega_1\omega_2^3 v_3^4 + 36\omega_3\omega_4\omega_1^2\omega_2^3 v_3^2 - 8\omega_3\omega_4 c_s^2\omega_1^3\omega_2 - 36\omega_3^2\omega_4\omega_1^2 v_2^2\omega_2 v_3^2 + 2\omega_3^2\omega_4 c_s^4\omega_1^3\omega_2^2 - 54\omega_4 c_s^2\omega_1^3\omega_2^2 v_3^2 +$
$132\omega_3\omega_4 c_s^2\omega_1^2 v_2^2\omega_2^2 + 36\omega_3\omega_4 c_s^2\omega_1^2\omega_2^3 - 18\omega_3^2\omega_1\omega_2^3 v_3^2 + 12\omega_3\omega_4\omega_1^3\omega_2 v_3^2 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 + 9\omega_3^2\omega_4\omega_1^3\omega_2^2 v_3^4 + 18\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2 + 9\omega_3^2\omega_4\omega_1^2\omega_2^3 v_3^2 -$
$36\omega_3\omega_4 c_s^4\omega_1^3\omega_2^2 + 2\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^3 + 54\omega_3^2 c_s^2\omega_1\omega_2^3 v_3^2 + 66\omega_3^2\omega_4\omega_1^3\omega_2 v_3^2 + 12\omega_3^2\omega_4\omega_1^2 v_2^2\omega_2 + 36\omega_3\omega_4\omega_1^3\omega_2^2 v_3^4 - 90\omega_3^2\omega_4\omega_1 v_2^2\omega_2^3 v_3^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 -$
$72\omega_3^2 c_s^2\omega_1\omega_2^3 + 54\omega_3\omega_4 c_s^2\omega_1^2\omega_2^2 v_3^2 - 18\omega_3^2\omega_1^3\omega_2^2 v_3^2 - 56\omega_3\omega_4 c_s^2\omega_1^2\omega_2^2 - 126\omega_3\omega_4 c_s^2\omega_1^2 v_2^2\omega_2^3 - 54\omega_3 c_s^2\omega_1^3\omega_2^2 v_3^2 - 3\omega_3^2\omega_4 c_s^4\omega_1^3\omega_2^3 - 28\omega_3^2\omega_4 c_s^4\omega_1^2\omega_2 +$
$54\omega_3^2\omega_4\omega_1\omega_2^3 v_3^4 + 12\omega_3^2\omega_4 c_s^2\omega_1^3 v_2^2 - 6\omega_3\omega_4\omega_1^2\omega_2^2 v_3^2 - 18\omega_3\omega_4 c_s^2\omega_1^3\omega_2^3 + \omega_3^2\omega_4\omega_1^3 v_2^4\omega_2^2 + 28\omega_3^2\omega_4 c_s^4\omega_1^3\omega_2^2 - 18\omega_3\omega_1^2\omega_2^3 v_3^2 - 48\omega_3^2\omega_4\omega_1^3 v_3^2 +$
$12\omega_3^2\omega_4\omega_1^2\omega_2 v_3^4 - 36\omega_3\omega_4 c_s^4\omega_1^2\omega_2^3 - 12\omega_3^2\omega_4\omega_1^3 v_2^2 + 24\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^2 v_3^2 - 2\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^2 + 8\omega_3\omega_4 c_s^4\omega_1^3\omega_2 - 24\omega_3^2\omega_4\omega_1^2 v_2^2\omega_2^2 - 18\omega_4\omega_1^2\omega_2^3 v_3^2 +$
$132\omega_3^2\omega_4 c_s^2\omega_1^3 v_3^2 - 48\omega_3^2\omega_4\omega_2^3 v_3^4 - 6\omega_3^2\omega_4 c_s^2\omega_1^2 v_2^2\omega_2^3 - 18\omega_3^2\omega_1^2\omega_2^2 v_3^4 - 14\omega_3^2\omega_4 c_s^4\omega_1^2\omega_2^3 + 36\omega_3\omega_4 c_s^2\omega_1^3\omega_2^2 + 12\omega_3^2\omega_4\omega_1\omega_2^2 v_3^4 - 14\omega_3^2\omega_4 c_s^4\omega_1^3\omega_2 -$
$36\omega_3\omega_4 c_s^2\omega_1^3\omega_2 v_3^2 - 18\omega_4\omega_1^3\omega_2^2 v_3^4 - 144\omega_3^2\omega_4\omega_1 v_2^2\omega_2^2 v_3^2 - 90\omega_3\omega_4 c_s^2\omega_1^2\omega_2^3 v_3^2 + 28\omega_3^2\omega_4 c_s^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1^2\omega_2 + 72\omega_3^2 c_s^4\omega_1\omega_2^3 - 18\omega_3\omega_1^3\omega_2^2 v_3^4 +$
$66\omega_3^2\omega_4 c_s^2\omega_1^2 v_2^2\omega_2^2 + \omega_3^2\omega_4\omega_1^2 v_2^2\omega_2^3 - 42\omega_3^2\omega_4\omega_1^2\omega_2^2 v_3^2 - 90\omega_3^2\omega_4\omega_1^3 v_2^2\omega_2 v_3^2 + 32\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2 + 216\omega_3^2 c_s^2\omega_1 v_2^2\omega_2^3 + 56\omega_3\omega_4 c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^2 \partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (3\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} + 2\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} - 4\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^3 c_s^2\omega_{11} - 2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^2 + 2\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} +$
$8\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11} + 5\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 4\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2 - 2\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{11} + 9\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}v_2^2 -$
$2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 4\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{11}v_2^2 + 2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{11} - 4\omega_{19}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} - 8\omega_{19}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11} +$
$26\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{11} - 15\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} + 2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} + 2\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{11} - 4\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{11} +$
$2\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}v_2^2 + 3\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 8\omega_{19}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11} - 4\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{11}v_2^2 + 4\omega_{19}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} +$
$4\omega_{19}^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}v_2^2 - 6\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{11} + 4\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{11} + \omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} - 4\omega_{19}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_2^2 -$
$8\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 2\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3 c_s^2\omega_{11} + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3 c_s^2\omega_{11} - 9\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} +$
$4\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3 c_s^2\omega_{11} + 13\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} - \omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} + 4\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11} + 4\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{11}v_2^2 -$
$3\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}v_2^2 - \omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}v_2^2 - 4\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{11} - 24\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11} - \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} +$
$12\omega_{19}^2\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{11} - 6\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7\omega_{23}\omega_{11}v_2^2 - \omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 4\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{11} - 4\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{11} + 4\omega_{19}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}v_2^2 +$
$2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 - 2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{11}v_2^2 - 4\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2 - 2\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_2^2 - 8\omega_{19}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} +$
$4\omega_{19}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} - 2\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}\omega_{11} - 3\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_2^2 + 2\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} + 8\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} -$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 4\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}v_2^2 + 7\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_2^2 + 6\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7\omega_{23}\omega_{11} - 2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}v_2^2 -$
$8\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11} - 7\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 4\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2 - 5\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11} + 4\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^2 c_s^2\omega_{11} -$
$2\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_2^2 - 4\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{11}v_2^2 - 4\omega_{19}^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11} - 4\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} + \omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_2^2 +$
$11\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}c_s^2\omega_{11} + 3\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} - 4\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{11} + 2\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}c_s^2 + \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}v_2^2 +$
$2\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}\omega_{11}v_2^2 - 4\omega_{19}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11}v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}c_s^2\omega_{11} + 4\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2 c_s^2\omega_{11} - 2\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} -$
$16\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_{23}c_s^2\omega_{11} - 6\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11} + 2\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{11}v_2^2 - 5\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2)\frac{\rho v_2 v_3}{2\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (141\omega_3\omega_1\omega_2^3 v_3^2 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 + 12\omega_1^2 v_2^2\omega_2^2 + 50\omega_3\omega_1^3\omega_2^2 v_3^2 + 12\omega_3\omega_1^2\omega_2^2 + 108\omega_3 c_s^2\omega_1\omega_2^3 + 6\omega_1\omega_2^3 + 84\omega_3 c_s^2\omega_1^3 +$
$36c_s^2\omega_1^2\omega_2^2 - 9\omega_3\omega_1 v_2^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 - 66\omega_3 c_s^2\omega_2^3 + 60\omega_3\omega_1\omega_2^2 v_3^2 + 12\omega_3\omega_1^3 v_2^2 - 18c_s^2\omega_1^3\omega_2 + 6\omega_3\omega_1^2\omega_2 v_3^2 - 23\omega_3\omega_1^3\omega_2^2 - 9\omega_3\omega_1^3 v_2^2\omega_2 + 48\omega_3\omega_1^3 v_3^2 -$
$12\omega_3\omega_1 v_2^2\omega_2^2 - 18c_s^2\omega_1\omega_2^3 - 18\omega_3 c_s^2\omega_1^2\omega_2 - 66\omega_3\omega_1^2\omega_2^2 v_3^2 + 18\omega_3\omega_1^2 v_2^2\omega_2^2 - 114\omega_3\omega_2^3 v_3^2 + 42\omega_3 c_s^2\omega_1^3\omega_2^2 + 42\omega_3\omega_2^3 - 12\omega_3\omega_1^2 v_2^2\omega_2 - 75\omega_3\omega_1^3\omega_2 v_3^2 -$
$42\omega_3 c_s^2\omega_1^2\omega_2^3 - 12\omega_3\omega_1\omega_2^2 - 50\omega_3\omega_1^2\omega_2^3 v_3^2 - 108\omega_3 c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 - 6\omega_1^3 v_2^2\omega_2 - 36\omega_3\omega_1^3 - 60\omega_3\omega_1\omega_2^3 + 12\omega_3 v_2^2\omega_2^3 - 6\omega_1 v_2^2\omega_2^3 - 12\omega_1^2\omega_2^2)\frac{\rho v_2 v_3}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1 \partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 + 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5 v_3^2\omega_{18} + 12\omega_{19}^2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$6\omega_6\omega_{19}^2\omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_{18} + 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 v_3^2\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5 v_3^2\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_{18} - 9\omega_6\omega_{19}^2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$4\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_{19}^2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} +$

$12\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 6\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 9\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 6\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$8\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8 - 2\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 +$
$6\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2 - 12\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} +$
$4\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} - 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2 + 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2v_3^2\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 12\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_5\omega_{18} -$
$2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2 + 12\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$12\omega_6\omega_{19}^2\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2 - 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5v_3^2\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 12\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$2\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5v_3^2\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_5v_3^2\omega_{18} +$
$12\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + 2\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$12\omega_6\omega_{19}^2\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18} + 12\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2 - 12\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$12\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} + 8\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}v_3^2\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} +$
$2\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8 + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2 - 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_5\omega_{18} - 12\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5 +$
$2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_{18} + 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} -$
$4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5v_3^2 + 6\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5 + 12\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8v_3^2\omega_{18} - 4\omega_6\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} - 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18} - 24\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} - 12\omega_6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 24\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} + 4\omega_6\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} -$
$3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2 - 6\omega_6\omega_{19}\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5)\frac{v_1v_2v_3}{4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1v_1^2)\frac{v_1v_2v_3}{12\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = (2 + 3c_s^2\omega + \omega v_3^2 - \omega - 6c_s^2 - 2v_3^2)\frac{\rho v_2v_3}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = (6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2v_3^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} -$
$3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} - 9\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} -$
$9\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2 + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2 + 12\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 24\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 36\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 18\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} + 36\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 24\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 30\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 42\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 36\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 24\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 18\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2 + 54\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 36\omega_6^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2 + 12\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 12\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} - 6\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 - 18\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2 + 6\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} -$
$24\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2 - 12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$6\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18} - 9\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2 + 12\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$54\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 6\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5^2v_3^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 12\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} -$
$6\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 9\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} -$
$36\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18} + 18\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} -$
$42\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 12\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} + 6\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} + 24\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} + 18\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} -$
$6\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2v_3^2\omega_{18} - 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2v_3^2\omega_{18} - 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 - 54\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 54\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2v_3^2 -$
$12\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 12\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2 + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 24\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2v_3^2\omega_{18} +$

$6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} - 12\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2)\frac{\rho v_2v_3}{12\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = (3c_s^2\omega_{11}\omega_{18} - 9c_s^2\omega_{11} + v_3^2\omega_{18} + 3\omega_{11} - 3\omega_{11}v_3^2 - \omega_{18} - \omega_{11}\omega_{18} + 3c_s^2\omega_{18} + \omega_{11}v_3^2\omega_{18})\frac{\rho v_2v_3}{12\omega_{11}\omega_{18}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = (3\omega_6 + 3c_s^2\omega_8 + 3\omega_6c_s^2\omega_8 - \omega_6\omega_8 + \omega_6\omega_8v_3^2 + \omega_8v_3^2 - 9\omega_6c_s^2 - \omega_8 - 3\omega_6v_3^2)\frac{\rho v_2v_3}{12\omega_6\omega_8}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = (18\omega_3\omega_4\omega_1v_1^2 + 4\omega_3\omega_4\omega_2v_3^2 + 6\omega_3\omega_4c_s^2\omega_2 + 18\omega_3\omega_4c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4c_s^2\omega_1 - 18\omega_3\omega_4v_1^2\omega_2 - 27\omega_4c_s^2\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_4\omega_1\omega_2v_3^2 - 9\omega_3\omega_1\omega_2v_3^2 + 9\omega_3\omega_1\omega_2 + 6\omega_3\omega_4\omega_1\omega_2v_3^2 + 2\omega_3\omega_4\omega_1v_3^2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_2v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3v_2}$ at $\frac{\partial^4v_2}{\partial x_1\partial x_3^3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = (\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5v_3^2 - \omega_{19}^2\omega_7\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}^2\omega_7^3c_s^2\omega_8\omega_5^2 - 2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_8^2 - 8\omega_{19}^2c_s^2\omega_{20}\omega_8^2\omega_5^2 + 5\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_8\omega_5^2 + 2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_8 - \omega_{19}^2\omega_7^3\omega_{20}\omega_8\omega_5v_3^2 - \omega_{19}^2\omega_7^3\omega_{20}\omega_8\omega_5^2 + \omega_{19}^2\omega_7^3\omega_8^2\omega_5 + \omega_{19}^2\omega_7^3\omega_8^2\omega_5^2v_3^2 + 13\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_5^2 - \omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5^2v_3^2 - \omega_{19}\omega_7^3\omega_8^2\omega_5^2v_3^2 - 5\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}^2\omega_7^3\omega_8\omega_5v_3^2 + 2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_5 + 2\omega_{19}\omega_7\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5 - 2\omega_{19}^2\omega_7^2\omega_8\omega_5^2 + 2\omega_{19}\omega_7^2\omega_8^2\omega_5^2v_3^2 - 2\omega_{19}\omega_7^2\omega_8^2\omega_5^2 - 2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_5^2 + 4\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2 - \omega_7^3\omega_{20}\omega_8^2\omega_5^2 - 2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}\omega_7^3\omega_{20}\omega_8^2\omega_5^2v_3^2 + 7\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5 + \omega_7^3\omega_{20}\omega_8^2\omega_5^2v_3^2 + 2\omega_{19}^2\omega_7^2c_s^2\omega_8\omega_5^2 - 7\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_8\omega_5 - 2\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5v_3^2 + \omega_{19}^2\omega_7^3\omega_{20}\omega_8\omega_5 - 6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_8^2\omega_5 - \omega_{19}^2\omega_7^3\omega_8^2\omega_5^2 - 2\omega_{19}^2\omega_7^2\omega_8^2\omega_5^2v_3^2 + \omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5^2 - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}^2\omega_7^3c_s^2\omega_8\omega_5 + 4\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2v_3^2 - 2\omega_7^2\omega_{20}\omega_8^2\omega_5^2v_3^2 - 2\omega_{19}^2\omega_7^2c_s^2\omega_8^2\omega_5^2 + 2\omega_{19}^2\omega_7^3\omega_8\omega_5^2 + \omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2 + \omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}^2\omega_7^3c_s^2\omega_8^2\omega_5 - 4\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}\omega_7\omega_{20}\omega_8^2\omega_5^2v_3^2 + 2\omega_{19}\omega_7^2c_s^2\omega_8^2\omega_5^2 + 4\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5 - \omega_{19}\omega_7^3\omega_{20}\omega_8^2\omega_5 + 2\omega_{19}^2\omega_7^2\omega_8\omega_5^2v_3^2 + \omega_{19}\omega_7^3\omega_{20}\omega_8^2\omega_5v_3^2 - 11\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5^2 + \omega_{19}\omega_7^3\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}^2\omega_7^3\omega_8\omega_5^2v_3^2 + 2\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5 + \omega_{19}^2\omega_7\omega_{20}\omega_8^2\omega_5^2v_3^2 - \omega_{19}\omega_7^3c_s^2\omega_8^2\omega_5^2 + 2\omega_{19}^2\omega_7^2\omega_8^2\omega_5^2 + \omega_{19}\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5 - \omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5 - \omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2v_3^2 + \omega_{19}^2\omega_7^3c_s^2\omega_8^2\omega_5^2 + \omega_{19}^2\omega_7^3\omega_{20}\omega_8\omega_5^2v_3^2 + \omega_{19}\omega_7^3\omega_8^2\omega_5^2 + 6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_8\omega_5^2 - \omega_{19}^2\omega_7^3\omega_8^2\omega_5v_3^2 - 2\omega_{19}^2\omega_7^3\omega_8\omega_5)\frac{\rho v_1v_3}{2\omega_{19}^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = (-18\omega_3^2\omega_4c_s^2 + 3\omega_3^2\omega_1v_3^2 + 18\omega_4^2c_s^2\omega_1 + 18\omega_3\omega_4^2c_s^2 + 6\omega_3^2\omega_4 - 6\omega_4^2v_1^2 - 18\omega_3\omega_4c_s^2\omega_1 - 2\omega_3^2\omega_4\omega_1 + 2\omega_3\omega_4^2\omega_1 + 3\omega_4^2\omega_1v_1^2 - 6\omega_3^2v_3^2 + 3\omega_4^2\omega_1v_3^2 + 6\omega_3^2v_1^2 - 6\omega_3\omega_4^2c_s^2\omega_1 + 2\omega_3^2\omega_4\omega_1v_1^2 + 12\omega_3\omega_4v_3^2 + 6\omega_3\omega_4^2v_1^2 + 6\omega_3\omega_4\omega_1 - 6\omega_4^2\omega_1 - 12\omega_3\omega_4 + 12\omega_4^2 - 6\omega_4^2v_3^2 - 6\omega_3^2\omega_4v_1^2 + 36\omega_3\omega_4c_s^2 + 6\omega_3^2\omega_4c_s^2\omega_1 - 6\omega_3\omega_4^2 - 2\omega_3\omega_4^2\omega_1v_1^2 - 6\omega_3\omega_4\omega_1v_3^2 - 3\omega_3^2\omega_1v_1^2 - 36\omega_4^2c_s^2)\frac{\rho v_1v_3}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3v_3}$ at $\frac{\partial^4v_3}{\partial x_1\partial x_3^3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = (4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 + 12\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} - 12\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18} + 4\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18} + 12\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} - 6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5v_3^2\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_{18} - 3\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 2\omega_6\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 3\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 24\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8 - 2\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 + 2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2 - 4\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 12\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} - 9\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2 + 12\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2v_3^2\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_5\omega_{18} - 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2 + 4\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2 - 12\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5v_3^2\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 4\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 6\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18} + 12\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5v_3^2\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 12\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_5v_3^2\omega_{18} + 4\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 6\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + 6\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_3^2\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7c_s^2\omega_{11}^2\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2 - 4\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}\omega_7c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} +$

$12\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8 v_3^2\omega_{18} + 8\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}v_3^2\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} +$
$2\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8 + 6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 v_3^2 - 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5 +$
$2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8 v_3^2\omega_{18} + 6\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_{18} + 24\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18} -$
$12\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18} - 12\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 v_3^2\omega_{18} - 12\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 v_3^2 + 2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5 + 4\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$6\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8 v_3^2\omega_{18} - 12\omega_6\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5 v_3^2\omega_{18} - 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8 v_3^2\omega_{18} - 8\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 9\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 v_3^2\omega_{18} - 4\omega_6\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 8\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8 v_3^2\omega_{18} + 4\omega_6\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8 v_3^2\omega_{18} -$
$3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 v_3^2 - 2\omega_6\omega_{19}\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5)\frac{\rho v_1 v_2}{4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1 v_1^2)\frac{\rho v_1 v_2}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$ at $\frac{\partial^4\rho}{\partial x_2\partial x_3^3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (24 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 3c_s^2\omega^3 + 36\omega v_3^2 - 42c_s^2\omega^2 - 36\omega - 14\omega^2 v_3^2 - 72c_s^2 + \omega^3 v_3^2 - 24v_3^2)\frac{c_s^2 v_3}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (-12\omega_{19}^2\omega_7^3c_s^2\omega_{11}^2 - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11} - 45\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_2^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 +$
$6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_3^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2 v_2^2 + 36\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11} + 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} v_2^2 + 12\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} v_2^2 v_3^2 -$
$24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} v_2^2 + 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11} - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2 v_3^2 + 18\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_2^2 + 24\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} v_2^2 v_3^2 +$
$12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 - 3\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_3^2 - 42\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2 - 18\omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{11}^2 v_2^2 - 12\omega_{19}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^2 v_3^2 -$
$\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} v_2^2 v_3^2 + 12\omega_{19}^2\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 - 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} v_2^2 v_3^2 + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3c_s^4\omega_{11}^2 +$
$12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} v_2^2 v_3^2 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^2 - 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} -$
$36\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} v_2^2 - 6\omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{11}^2 v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} v_2^2 - 36\omega_{19}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^2 v_2^2 - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2 -$
$24\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 24\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 v_2^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} v_2^2 - 72\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_2^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} v_2^2 v_3^2 -$
$18\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^4\omega_{11}^2 + 12\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{11} + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} v_3^2 + 15\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2 +$
$12\omega_{19}^2\omega_{10}\omega_7^2c_s^2\omega_{11}^2 v_3^2 - 36\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{11} v_2^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_3^2 - 12\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{11} v_3^2 + 36\omega_{19}^2\omega_{10}\omega_7^2c_s^2\omega_{11}^2 v_2^2 -$
$6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} v_2^2 - 36\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} v_2^2 + 5\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{19}^2\omega_7^3\omega_{11}^2 v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^2 -$
$18\omega_{19}^2\omega_{16}\omega_7^3c_s^4\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 v_3^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 + 36\omega_{19}^2\omega_{10}\omega_7^2c_s^4\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} v_2^2 v_3^2 -$
$12\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} v_2^2 - 36\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11} + 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^2 v_2^2 - 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 v_3^2 +$
$72\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} v_2^2 - 24\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} v_2^2 - 5\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} v_3^2 + 12\omega_{19}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^2 + 27\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} v_2^2 +$
$156\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2 + 48\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 12\omega_{19}^2\omega_7^3\omega_{11}^2 v_2^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^2 v_3^2 -$
$18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 v_2^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} v_3^2 + 3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2 + 12\omega_{19}^2\omega_7^3\omega_{23}\omega_{11} v_2^2 -$
$6\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^2 v_2^2 v_3^2 + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} v_3^2 + 36\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} v_2^2 - 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2 + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 +$
$12\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} v_3^2 + 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 - 12\omega_{19}^2\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 v_3^2 - 9\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} v_2^2 + 72\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} v_2^2 +$
$54\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11} - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2c_s^4\omega_{11}^2 - 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 + 36\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_2^2 + 36\omega_{19}^2\omega_7^3c_s^4\omega_{11}^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 v_3^2 +$
$12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^2 v_2^2 - 12\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 15\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3^2 - 108\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} v_2^2 +$
$6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} v_3^2 - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^2 v_2^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^2 v_3^2 - 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} v_2^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 +$
$6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 15\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} v_3^2 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 +$
$12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} v_2^2 v_3^2 - 36\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_2^2 + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2 v_2^2 + 12\omega_{19}^2\omega_7^3c_s^2\omega_{11}^2 v_3^2 +$
$12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} + 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_3^2 - 12\omega_{19}^2\omega_{10}\omega_7^2c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_7^3\omega_{23}\omega_{11} v_2^2 v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 v_3^2 -$
$12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 - 36\omega_{19}^2\omega_{10}\omega_7^3c_s^4\omega_{11}^2 - 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} v_2^2 v_3^2 - 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 +$
$48\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 + 144\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_2^2 - 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2 v_3^2 + 36\omega_{19}^2\omega_7^3c_s^2\omega_{11}^2 v_2^2 -$
$6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 96\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}c_s^4\omega_{11}^2 + 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} v_2^2 - 72\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 v_2^2 + 24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 v_3^2 -$
$36\omega_{19}^2\omega_7^3\omega_{23}c_s^4\omega_{11} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2 - 60\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2 + 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 v_2^2 - 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 v_3^2 +$
$3\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 9\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} v_2^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 v_3^2 - 15\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11} +$
$36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} v_2^2 + 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 v_3^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 + 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^4\omega_{11}^2 + 6\omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{11}^2)\frac{v_3}{12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (12\omega_{19}^2\omega_7^2\omega_{11} v_3^2 - 15\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}c_s^2 - 3\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} v_3^2 - 36\omega_{19}^2\omega_{10}\omega_7\omega_{23}c_s^2 +$
$6\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} v_3^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} + 6\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{11} v_3^2 + 36\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11} - 18\omega_{19}^2\omega_{16}\omega_7^2c_s^2\omega_{11} +$

$3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} + 12\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{11} + 5\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} -$
$36\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11} + 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{11}v_3^2 + 12\omega_{19}^2\omega_{10}\omega_7\omega_{23} - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}v_3^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} -$
$5\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_3^2 - 36\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} - 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{11}v_3^2 + 54\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} + 18\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 - 12\omega_{19}^2\omega_7^2\omega_{11} -$
$12\omega_{19}^2\omega_{10}\omega_7\omega_{23}v_3^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}v_3^2 - 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} + 36\omega_{19}^2\omega_{10}\omega_7c_s^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{11}v_3^2 -$
$36\omega_{19}^2\omega_{16}\omega_{10}\omega_7c_s^2\omega_{11} + 12\omega_{19}^2\omega_7^2\omega_{23} - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}\omega_{11} + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}v_3^2 - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11} -$
$36\omega_{19}^2\omega_7^2\omega_{23}c_s^2 + 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}v_3^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{11} + 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}v_3^2 - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} -$
$18\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23} + 12\omega_{19}^2\omega_{10}\omega_7\omega_{11}v_3^2 - 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}^2\omega_{10}\omega_7\omega_{11} - 36\omega_{19}^2\omega_{10}\omega_7^2c_s^2\omega_{11} -$
$12\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}v_3^2 + 18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}v_3^2 + 36\omega_{19}^2\omega_7^2c_s^2\omega_{11} + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_{23} - 12\omega_{19}^2\omega_7^2\omega_{23}v_3^2 + 54\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 +$
$36\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{11} + 36\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}\omega_{11}v_3^2 + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 - 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}v_3^2 + 3\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} -$
$9\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 6\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11}v_3^2)\frac{c_s^2v_3}{12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (\omega_3^2\omega_{10}^2v_3^2 - 12\omega_{10}^2v_3^2 + 18\omega_6\omega_3^2c_s^2 + 6\omega_3^2\omega_{10} + 3\omega_6\omega_3^2\omega_{10}^2c_s^2 + 12\omega_3\omega_{10}v_3^2 + 54\omega_6\omega_3\omega_{10}c_s^2 + 12\omega_6\omega_{10}^2v_3^2 + 12\omega_6\omega_3 +$
$3\omega_6\omega_3^2\omega_{10} + 3\omega_3^2\omega_{10}^2c_s^2 - 6\omega_6\omega_3^2 - \omega_6\omega_3^2\omega_{10}^2 - 36\omega_{10}^2c_s^2 + 6\omega_6\omega_3^2v_3^2 + \omega_6\omega_3^2\omega_{10}^2v_3^2 + 36\omega_3\omega_{10}c_s^2 - \omega_3^2\omega_{10}^2 + 18\omega_6\omega_3\omega_{10}v_3^2 + 36\omega_6\omega_{10}^2c_s^2 -$
$6\omega_3\omega_{10}^2 + 18\omega_3\omega_{10}^2c_s^2 + 12\omega_6\omega_{10} - 12\omega_6\omega_3\omega_{10}^2v_3^2 - 36\omega_6\omega_{10}c_s^2 + 12\omega_6\omega_3\omega_{10}^2 - 18\omega_3^2\omega_{10}c_s^2 - 12\omega_6\omega_3v_3^2 - 3\omega_6\omega_3^2\omega_{10}v_3^2 + 6\omega_3\omega_{10}^2v_3^2 -$
$36\omega_6\omega_3\omega_{10}^2c_s^2 - 18\omega_6\omega_3\omega_{10} - 12\omega_6\omega_{10}v_3^2 + 12\omega_{10}^2 - 6\omega_3^2\omega_{10}v_3^2 - 12\omega_3\omega_{10} - 36\omega_6\omega_3c_s^2 - 12\omega_6\omega_{10}^2 - 9\omega_6\omega_3^2\omega_{10}c_s^2)\frac{c_s^2v_3}{12\omega_6\omega_3^2\omega_{10}^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (-108\omega_4^2c_s^4\omega_1^2\omega_2^3 - 56\omega_3^2\omega_4^2\omega_1^3v_3^2 + 448\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2v_3^2 + 78\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^4 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 +$
$6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 - 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 144\omega_3^2\omega_4^2\omega_2^3v_3^4 + 52\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 -$
$108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 18\omega_4^2c_s^2\omega_1^3\omega_2^3 + 208\omega_3^2\omega_4^2c_s^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 + 228\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^4 + 72\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 -$
$56\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2v_3^2 + 152\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 - 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 208\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 92\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^2 + 184\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 108\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 -$
$9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3v_3^2 - 104\omega_3^2\omega_4^2c_s^2\omega_1^3 + 320\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 36\omega_4^2c_s^2\omega_1^2\omega_2^3 - 36\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 118\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 216\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 +$
$48\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 + 394\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 120\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^4 +$
$54\omega_4^2c_s^4\omega_1^3\omega_2^3 + 104\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 - 88\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 - 36\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 120\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3 - 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 + 6\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 +$
$18\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 1232\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 + 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 - 342\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 276\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 -$
$24\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^4 - 16\omega_3^2\omega_4^2\omega_2^3 - 784\omega_3^2\omega_4^2c_s^2\omega_2^3v_3^2 - 288\omega_3^2\omega_4^2c_s^4\omega_2^3 + 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 - 136\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 +$
$588\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 32\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 - 168\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 712\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 96\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^4 - 144\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 -$
$460\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 160\omega_3^2\omega_4^2\omega_2^3v_3^2 - 6\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 + 18\omega_3^2c_s^2\omega_1^3\omega_2^3v_3^2 + 48\omega_3^2\omega_4^2\omega_1^3v_3^4 + 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 92\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^2 -$
$368\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 412\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 + 108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 132\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^4 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3 + 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 -$
$78\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^4 - 18\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 256\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 + 56\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2 + 18\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2)\frac{v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$ **at** $\frac{\partial^4v_2}{\partial x_2\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (2 + 3c_s^2\omega + \omega v_3^2 - \omega - 6c_s^2 - 2v_3^2)\frac{\rho v_2v_3}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} - 18\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2v_3^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2v_3^2 -$
$24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}^2 - 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2 + 60\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_3^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 -$
$66\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 84\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}v_3^2 - 66\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 +$
$84\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + \omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2v_3^2 + 18\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} +$
$6\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2 - 6\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_3^2 + 48\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2 +$
$12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2v_3^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2v_3^2 +$
$12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2v_3^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2v_3^2 - 42\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} +$
$3\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_3^2 - 132\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 +$
$24\omega_{19}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 24\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 + 156\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2 - 4\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 +$
$24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 + 24\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^2 - 24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2 + 66\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$24\omega_{19}^2\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2v_3^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2 - 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2v_3^2 -$
$12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2v_3^2 + 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 36\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 - 72\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 +$
$24\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^2 - 18\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_3^2 +$
$12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2v_3^2 + 24\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 24\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} +$
$12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 + 4\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_3^2 - 24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$90\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 48\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 24\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 72\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 +$
$36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}^2v_3^2 - 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 24\omega_{19}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 96\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_{23}c_s^2\omega_{11}^2 -$
$6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} + 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2v_3^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11} + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_3^2 +$
$24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2v_3^2 - \omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2v_3^2)\frac{\rho v_2v_3}{12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-\omega_{19} + 3\omega_{19}c_s^2 + 3\omega_{19}c_s^2\omega_{11} + \omega_{19}v_3^2 - 9c_s^2\omega_{11} + 3\omega_{11} + \omega_{19}\omega_{11}v_3^2 - \omega_{19}\omega_{11} - 3\omega_{11}v_3^2)\frac{\rho v_2v_3}{12\omega_{19}\omega_{11}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (3\omega_6 - \omega_{10} - \omega_6\omega_{10} + 3\omega_6\omega_{10}c_s^2 - 9\omega_6 c_s^2 + 3\omega_{10}c_s^2 + \omega_6\omega_{10}v_3^2 - 3\omega_6 v_3^2 + \omega_{10}v_3^2)\frac{\rho v_2 v_3}{12\omega_6\omega_{10}}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (4\omega_3\omega_4\omega_2 v_3^2 + 6\omega_3\omega_4 c_s^2\omega_2 + 18\omega_3\omega_4 c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4 c_s^2\omega_1 - 27\omega_4 c_s^2\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 18\omega_3\omega_4 v_2^2\omega_2 - 9\omega_4\omega_1\omega_2 v_3^2 - 9\omega_3\omega_1\omega_2 v_3^2 + 9\omega_3\omega_1\omega_2 + 6\omega_3\omega_4\omega_1\omega_2 v_3^2 + 2\omega_3\omega_4\omega_1 v_3^2 + 2\omega_3\omega_4\omega_2 + 18\omega_3\omega_4\omega_1 v_2^2)\frac{\rho v_2 v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2 \partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = (-12 - 6\omega^2 - c_s^2\omega^3 - 54\omega v_3^2 + 2c_s^2\omega^2 + 18\omega + 18\omega^2 v_3^2 + 36 v_3^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = (-12\omega_{19}^2\omega_7^3 c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11} - 15\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_2^2 - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 v_3^2 -$
$12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 - 12\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_3^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{11}^2 v_2^2 + 12\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11} + 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 +$
$36\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2 v_3^2 - 24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_2^2 + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{11}^2 v_3^2 + 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_2^2 +$
$72\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}v_2^2 v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 + 30\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_3^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2 - 6\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{11}^2 v_2^2 -$
$36\omega_{19}^2\omega_{10}\omega_7^3 c_s^2\omega_{11}^2 v_3^2 - 108\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 v_3^2 + 12\omega_{19}^2\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 - 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3 c_s^4\omega_{11}^2 -$
$18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}v_2^2 v_3^2 + 36\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{11}^2 - 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 -$
$18\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{11}^2 v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 - 12\omega_{19}^2\omega_{10}\omega_7^3 c_s^2\omega_{11}^2 v_2^2 - 72\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 24\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 v_2^2 -$
$12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 - 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_2^2 + 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 v_3^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 c_s^4\omega_{11}^2 + 12\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{11} +$
$\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 36\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2 - 48\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11}^2 v_3^2 + 36\omega_{19}^2\omega_{10}\omega_7^2 c_s^2\omega_{11}^2 v_3^2 -$
$12\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 - 15\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_3^2 - 36\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 + 12\omega_{19}^2\omega_{10}\omega_7^2 c_s^2\omega_{11}^2 v_2^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2 -$
$12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 + 5\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{19}^2\omega_7^3\omega_{11}^2 v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{11}^2 - 6\omega_{19}^2\omega_{16}\omega_7^3 c_s^4\omega_{11}^2 +$
$60\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 v_3^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 + 12\omega_{19}^2\omega_{10}\omega_7^2 c_s^4\omega_{11}^2 + 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2 v_3^2 - 12\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2 -$
$12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{11}^2 v_2^2 - 36\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 v_3^2 + 24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 -$
$24\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}v_2^2 - 15\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 + 12\omega_{19}^2\omega_{10}\omega_7^3 c_s^2\omega_{11}^2 + 9\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2 +$
$144\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 36\omega_{19}^2\omega_7^3\omega_{11}^2 v_2^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}v_2^2 + 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{11}^2 v_3^2 - 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 v_2^2 +$
$18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}v_3^2 - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11}^2 + 12\omega_{19}^2\omega_7^3\omega_{23}\omega_{11}v_2^2 - 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^2 v_2^2 v_3^2 +$
$12\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 - 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{11}^2 + 36\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 + 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 - 36\omega_{19}^2\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 v_3^2 -$
$9\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2 + 24\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}v_2^2 + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11} - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 c_s^4\omega_{11}^2 - 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 +$
$12\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 v_2^2 + 12\omega_{19}^2\omega_7^3 c_s^4\omega_{11}^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 v_3^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^2 v_2^2 -$
$12\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 45\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3^2 - 36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 + 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{11}^2 v_2^2 -$
$36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{11}^2 v_3^2 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 + 18\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 15\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 +$
$54\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11}^2 - 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 v_3^2 -$
$12\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_2^2 + 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{11}^2 v_2^2 + 36\omega_{19}^2\omega_7^3 c_s^2\omega_{11}^2 v_3^2 + 12\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 102\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_3^2 -$
$12\omega_{19}^2\omega_{10}\omega_7^2 c_s^2\omega_{11}^2 - 36\omega_{19}^2\omega_7^3\omega_{23}\omega_{11}v_2^2 v_3^2 + 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 v_3^2 - 12\omega_{19}^2\omega_{10}\omega_7^3 c_s^4\omega_{11}^2 - 36\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 v_3^2 - 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 v_2^2 +$
$12\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 - 48\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 + 48\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_2^2 + 24\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 v_3^2 + 18\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{11}^2 v_3^2 +$
$12\omega_{19}^2\omega_7^3 c_s^2\omega_{11}^2 v_2^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_{23}c_s^4\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 - 24\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 v_2^2 + 72\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_2^2 v_3^2 -$
$12\omega_{19}^2\omega_7^3\omega_{23}c_s^4\omega_{11} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{11}^2 - 5\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 v_2^2 - 72\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 v_3^2 -$
$6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 27\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2 + 60\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 v_3^2 - 5\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11} +$
$36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 + 36\omega_{19}^2\omega_{10}\omega_7^2\omega_{11}^2 v_2^2 v_3^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^4\omega_{11}^2 + 6\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{11}^2)\frac{\rho}{12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = (-12\omega_{16}\omega_{10}\omega_7^2\omega_{11} + 12\omega_{19}\omega_7^3\omega_{23} - 3\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 + 36\omega_{19}\omega_{10}\omega_7^3\omega_{23}v_3^2 + 5\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 12\omega_{19}\omega_{10}\omega_7^2\omega_{23} +$
$12\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2 c_s^2\omega_{11} - 54\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 - 12\omega_{19}\omega_{10}\omega_7^3 c_s^2\omega_{11} + 36\omega_{19}\omega_7^3\omega_{11}v_3^2 - 12\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} +$
$54\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_3^2 - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 18\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_3^2 + 6\omega_{16}\omega_{10}\omega_7^3\omega_{11} + 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11}v_3^2 - 18\omega_{16}\omega_{10}\omega_7^3\omega_{11}v_3^2 -$
$12\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11} + 36\omega_{19}\omega_{10}\omega_7^2\omega_{11}v_3^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{11} + 12\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2 + 12\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} + 18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} -$
$18\omega_{19}\omega_{16}\omega_7^3\omega_{11}v_3^2 - 12\omega_{19}\omega_{10}\omega_7^3\omega_{23} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2 + 12\omega_{19}\omega_{10}\omega_7^2 c_s^2\omega_{11} - 15\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_3^2 +$
$12\omega_{19}\omega_{10}\omega_7^3\omega_{11} + 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 36\omega_{19}\omega_{10}\omega_7^2\omega_{23}v_3^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} -$
$6\omega_{16}\omega_{10}\omega_7^3 c_s^2\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} + 18\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 36\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}v_3^2 -$
$12\omega_{19}\omega_7^3\omega_{23}c_s^2 - 6\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{11} - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11} - 5\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2 - 36\omega_{19}\omega_{10}\omega_7^3\omega_{11}v_3^2 +$
$12\omega_{19}\omega_7^3 c_s^2\omega_{11} + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 + \omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 5\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} + 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_3^2 +$
$36\omega_{16}\omega_{10}\omega_7^2\omega_{11}v_3^2 - 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11}v_3^2 - 12\omega_{19}\omega_7^3\omega_{11} - 36\omega_{19}\omega_7^3\omega_{23}v_3^2)\frac{c_s^2\rho}{12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = (18\omega_6\omega_3^3 v_3^2 - 18\omega_6\omega_3^2 c_s^2 - 6\omega_3^2\omega_{10} + \omega_3^3\omega_{10}c_s^2 - 18\omega_3^3 v_3^2 - 36\omega_3\omega_{10}v_3^2 + 18\omega_6\omega_3\omega_{10}c_s^2 + 12\omega_3^2 c_s^2 - 12\omega_6\omega_3 + \omega_6\omega_3^2\omega_{10} -$
$\omega_6\omega_3^3\omega_{10}c_s^2 + 18\omega_6\omega_3^2 + 6\omega_6\omega_3^3 c_s^2 - \omega_3^3\omega_{10} - 12\omega_3^2 - 54\omega_6\omega_3^2 v_3^2 + 3\omega_3^3\omega_{10}v_3^2 - 6\omega_3^3 c_s^2 - 12\omega_3\omega_{10}c_s^2 - 6\omega_6\omega_3^3 + 6\omega_3^3 + 36\omega_3^2 v_3^2 - 12\omega_6\omega_{10}c_s^2 +$

$6\omega_3^2\omega_{10}c_s^2 + 36\omega_6\omega_3v_3^2 - 3\omega_6\omega_3^2\omega_{10}v_3^2 + 18\omega_3^2\omega_{10}v_3^2 + 12\omega_3\omega_{10} + 12\omega_6\omega_3c_s^2 - 5\omega_6\omega_3^2\omega_{10}c_s^2)\frac{c_s^2\rho}{12\omega_6\omega_3^3\omega_{10}}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = (153\omega_3\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 - 4\omega_3\omega_4\omega_1^2\omega_2^2 + 12\omega_3\omega_4\omega_1\omega_2^2v_3^2 - 20\omega_3\omega_4c_s^2\omega_1^3 - 28\omega_3\omega_4c_s^4\omega_1\omega_2^2 - 168\omega_3\omega_4\omega_1^2\omega_2^2v_3^4 + 3\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 432\omega_3\omega_4c_s^2\omega_1\omega_2^3v_3^2 + 60\omega_4c_s^2\omega_1^2\omega_2^2v_3^2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 - 312\omega_3\omega_4c_s^2\omega_2^3v_3^2 - 10\omega_3\omega_4\omega_1^3\omega_2 - 36\omega_3c_s^2\omega_1\omega_2^3 - 96\omega_3\omega_4\omega_1^2\omega_2v_3^2 + 94\omega_3\omega_4c_s^4\omega_1\omega_2^3 - 8\omega_4c_s^2\omega_1\omega_2^3 - 138\omega_3\omega_4\omega_1^2\omega_2^3v_3^4 - 264\omega_3\omega_4\omega_2^3v_3^4 - 240\omega_3\omega_4\omega_1^3\omega_2v_3^4 + 120\omega_3\omega_4c_s^2\omega_1^2\omega_2v_3^2 - 108\omega_3c_s^2\omega_1^2\omega_2^3v_3^2 - 60\omega_3\omega_4\omega_1^3v_3^2 - 222\omega_3\omega_4\omega_1\omega_2^3v_3^2 + 32\omega_3\omega_4c_s^2\omega_1\omega_2^2 - \omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 - \omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 36\omega_3c_s^4\omega_1\omega_2^3 + 24\omega_4c_s^2\omega_1^3\omega_2v_3^2 - 54\omega_3\omega_4c_s^2\omega_1\omega_2^3 + 40\omega_3\omega_4c_s^2\omega_2^3 + 8\omega_3\omega_4\omega_1^2\omega_2 - 54\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 60\omega_3\omega_4c_s^2\omega_1\omega_2^2v_3^2 - 81\omega_3\omega_4\omega_1^3\omega_2^2v_3^2 + 8\omega_4c_s^4\omega_1\omega_2^3 + 96\omega_3\omega_4\omega_1^3v_3^4 - 9\omega_4c_s^2\omega_1^3\omega_2^3 - 3\omega_3\omega_4c_s^4\omega_1^3\omega_2^3 + 8\omega_3\omega_4c_s^4\omega_1^2\omega_2 + 408\omega_3\omega_4\omega_1\omega_2^3v_3^4 - 36\omega_3c_s^4\omega_1^2\omega_2^3 + 81\omega_3\omega_4\omega_1^2\omega_2^3v_3^2 - 9\omega_3c_s^2\omega_1^3\omega_2^3 + 42\omega_3\omega_4c_s^2\omega_1^3\omega_2 + 144\omega_3\omega_4\omega_2^3v_3^2 - 54\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 + 24\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - 18\omega_4c_s^4\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_1\omega_2^3v_3^2 + 138\omega_3\omega_4\omega_1^3\omega_2v_3^2 + 8\omega_4c_s^4\omega_1^3\omega_2 + 17\omega_3\omega_4c_s^4\omega_1^2\omega_2^2 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 8\omega_3\omega_4\omega_2^3 + 138\omega_3\omega_4\omega_1^3\omega_2^2v_3^4 + 20\omega_4c_s^4\omega_1^2\omega_2^2 - 90\omega_3\omega_4c_s^2\omega_1^2\omega_2^2v_3^2 + 24\omega_4c_s^2\omega_1\omega_2^3v_3^2 + 16\omega_3\omega_4c_s^4\omega_1^3 - 6\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 3\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 9\omega_4c_s^4\omega_1^3\omega_2^3 + \omega_3\omega_4\omega_1^2v_2^2\omega_2^3 - 16\omega_3\omega_4c_s^2\omega_2^2\omega_2 + 4\omega_3\omega_4\omega_1^3 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 84\omega_3\omega_4\omega_1^2\omega_2^2v_3^2 + 27\omega_4c_s^2\omega_1^3\omega_2^3v_3^2 + 14\omega_3\omega_4\omega_1\omega_2^3 - 29\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 - 24\omega_3\omega_4\omega_1\omega_2^2v_3^4 - 68\omega_3\omega_4c_s^4\omega_2^3 - 32\omega_3\omega_4c_s^4\omega_1^3\omega_2 - 8\omega_4c_s^2\omega_1^3\omega_2 + 18\omega_4c_s^2\omega_1^2\omega_2^3 + 27\omega_3c_s^2\omega_1^3\omega_2^3v_3^2 - 24\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2^2 - 288\omega_3\omega_4c_s^2\omega_1^3\omega_2v_3^2 + 144\omega_3\omega_4c_s^2\omega_1^3v_3^2 - 153\omega_3\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 18\omega_4c_s^4\omega_1^3\omega_2^2 - 20\omega_4c_s^2\omega_1^2\omega_2^2 + 192\omega_3\omega_4\omega_1^2\omega_2v_3^4 + \omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 10\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_z^4\rho}$ **at** $\frac{\partial^4\rho}{\partial x_3^4}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^4\rho} = (c_s^2\omega + 6v_3^4 + 3\omega v_3^2 + 2c_s^4 - 3\omega v_3^4 + 24c_s^2v_3^2 - c_s^4\omega - 2c_s^2 - 12c_s^2\omega v_3^2 - 6v_3^2)\frac{v_2}{24\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho} = (-24\omega_7c_s^4\omega_{11}^2 - 24\omega_{19}^2\omega_7c_s^2 + 432\omega_{19}\omega_7c_s^2\omega_{11}^2v_3^2 + 48\omega_{19}^2\omega_7c_s^2\omega_{11} - 96\omega_{19}^2\omega_7\omega_{11}v_3^4 - 144\omega_{19}^2\omega_7^2c_s^2v_3^2 - \omega_{19}^2\omega_7^2c_s^4\omega_{11}^2 - 36\omega_{19}^2\omega_7^2\omega_{11}v_3^2 + 72\omega_7^2c_s^2\omega_{11}^2v_3^2 - 3\omega_{19}^2\omega_7^2\omega_{11}^2v_3^4 - 12\omega_7^2\omega_{11}^2v_3^2 + 24\omega_{19}^2c_s^4\omega_{11} + 12\omega_{19}\omega_7^2c_s^2\omega_{11}^2 - 24\omega_7\omega_{11}^2v_3^4 + 24\omega_{19}c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_7^2c_s^4 + 48\omega_{19}\omega_7c_s^4\omega_{11}^2 + 48\omega_{19}\omega_7\omega_{11}v_3^2 - 72\omega_{19}^2\omega_7v_3^2 + 150\omega_{19}^2\omega_7^2c_s^2\omega_{11}v_3^2 - 48\omega_{19}^2\omega_{11}v_3^2 + 24\omega_{19}\omega_7^2\omega_{11}v_3^4 + 14\omega_{19}^2\omega_7^2c_s^4\omega_{11} + 30\omega_{19}\omega_7^2\omega_{11}^2v_3^2 - 12\omega_7^2c_s^2\omega_{11}^2 - 36\omega_{19}^2\omega_7^2v_3^4 + 48\omega_{19}\omega_{11}^2v_3^2 + 96\omega_{19}\omega_7\omega_{11}^2v_3^4 + 72\omega_{19}\omega_7^2c_s^2\omega_{11}v_3^2 - 144\omega_7c_s^2\omega_{11}^2v_3^2 + 48\omega_{19}^2\omega_{11}v_3^4 - 24\omega_{19}^2c_s^2\omega_{11} - 12\omega_{19}\omega_7^2c_s^4\omega_{11}^2 - 24\omega_{19}\omega_7^2\omega_{11}v_3^2 - 48\omega_{19}\omega_7\omega_{11}v_3^4 + 72\omega_{19}^2\omega_7v_3^4 - 24\omega_{19}c_s^4\omega_{11}^2 - 126\omega_{19}\omega_7^2c_s^2\omega_{11}^2v_3^2 + 36\omega_{19}^2\omega_7^2v_3^2 - 48\omega_{19}\omega_{11}^2v_3^4 + 24\omega_7c_s^2\omega_{11}^2 - 96\omega_{19}\omega_7\omega_{11}^2v_3^2 - 216\omega_{19}c_s^2\omega_{11}^2v_3^2 - 48\omega_{19}^2\omega_7c_s^4\omega_{11} - 12\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2v_3^2 + \omega_{19}^2\omega_7^2c_s^2\omega_{11}^2 - 30\omega_{19}\omega_7^2\omega_{11}^2v_3^4 + 288\omega_{19}^2\omega_7c_s^2v_3^2 - 14\omega_{19}^2\omega_7^2c_s^2\omega_{11} + 36\omega_{19}^2\omega_7^2\omega_{11}v_3^4 + 12\omega_7^2c_s^4\omega_{11}^2 - 432\omega_{19}^2\omega_7c_s^2\omega_{11}v_3^2 + 24\omega_{19}^2\omega_7c_s^4 + 216\omega_{19}^2c_s^2\omega_{11}v_3^2 + 96\omega_{19}^2\omega_7\omega_{11}v_3^2 - 144\omega_{19}\omega_7c_s^2\omega_{11}v_3^2 - 48\omega_{19}\omega_7c_s^2\omega_{11}^2 + 24\omega_7\omega_{11}^2v_3^2 + 12\omega_{19}^2\omega_7^2c_s^2 + 3\omega_{19}^2\omega_7^2\omega_{11}^2v_3^2 + 12\omega_7^2\omega_{11}^2v_3^4)\frac{v_2}{24\omega_{19}^2\omega_7^2\omega_{11}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z^4\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^4\rho} = (-12c_s^2\omega_{11}v_3^2 + 6v_3^4 - 3\omega_{11}v_3^4 + c_s^2\omega_{11} + 2c_s^4 + 24c_s^2v_3^2 + 3\omega_{11}v_3^2 - 2c_s^2 - c_s^4\omega_{11} - 6v_3^2)\frac{v_2}{24\omega_{11}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z^4\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^4\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_z^4\rho} = (6v_3^4 - 3\omega_6v_3^4 + 2c_s^4 - \omega_6c_s^4 - 12\omega_6c_s^2v_3^2 + \omega_6c_s^2 + 24c_s^2v_3^2 - 2c_s^2 + 3\omega_6v_3^2 - 6v_3^2)\frac{v_2}{24\omega_6}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_z^4\rho} = (12\omega_2v_3^4 + 2c_s^4\omega_1 - 6\omega_1v_3^2 + 9\omega_1\omega_2v_3^2 - 36c_s^2\omega_1\omega_2v_3^2 + 48c_s^2\omega_2v_3^2 + 4c_s^4\omega_2 - 3c_s^4\omega_1\omega_2 + 24c_s^2\omega_1v_3^2 - 2c_s^2\omega_1 + 6\omega_1v_3^4 - 9\omega_1\omega_2v_3^4 - 12\omega_2v_3^2 - 4c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{v_2}{72\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_z^4v_2}$ **at** $\frac{\partial^4v_2}{\partial x_3^4}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^4v_2} = (-84c_s^2\omega^2v_3^2 + 36c_s^2\omega - 72v_3^4 + 3\omega^3v_3^4 + c_s^2\omega^3 + 6c_s^2\omega^3v_3^2 - 108\omega v_3^2 - 42\omega^2v_3^4 - 14c_s^2\omega^2 + 48c_s^4 + 108\omega v_3^4 - 144c_s^2v_3^2 + 42\omega^2v_3^2 - 72c_s^4\omega - 24c_s^2 + 30c_s^4\omega^2 - 3\omega^3v_3^2 - 3c_s^4\omega^3 + 216c_s^2\omega v_3^2 + 72v_3^2)\frac{\rho}{24\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^4v_2} = (12\omega_{19}^2\omega_7c_s^2 - 72\omega_{19}^2\omega_7^2c_s^2v_3^2 + 24\omega_{19}^2c_s^4 - 12\omega_7^3v_3^2 + 24\omega_{19}\omega_7c_s^4 - 12\omega_{19}\omega_7^3c_s^2v_3^2 + 24\omega_{19}\omega_7^2c_s^2 + 3\omega_{19}^2\omega_7^3v_3^4 + 18\omega_{19}\omega_7^3v_3^2 + 24\omega_{19}^2\omega_7^2c_s^4 - 96\omega_{19}^2c_s^2v_3^2 - 24\omega_{19}^2\omega_7v_3^2 + 24\omega_7^2v_3^2 - 48\omega_{19}\omega_7v_3^4 - 24\omega_{19}\omega_7c_s^2v_3^2 + 12\omega_7^3c_s^2v_3^2 - 3\omega_{19}^2\omega_7^3c_s^4 - 72\omega_{19}\omega_7^2v_3^2 - 24\omega_{19}^2\omega_7^2v_3^4 - 6\omega_{19}\omega_7^3c_s^2 + 48\omega_{19}\omega_7v_3^2 + 24\omega_{19}^2\omega_7v_3^4 + 48\omega_{19}\omega_7^2c_s^2v_3^2 - 24\omega_7^2v_3^4 + 6\omega_{19}\omega_7^3c_s^4 + 24\omega_{19}^2\omega_7^2v_3^2 + 6\omega_{19}^2\omega_7^3c_s^2v_3^2 + 72\omega_{19}\omega_7^2v_3^4 + \omega_{19}^2\omega_7^3c_s^2 + 156\omega_{19}^2\omega_7c_s^2v_3^2 + 12\omega_7^3v_3^4 - 24\omega_{19}\omega_7c_s^2 - 48\omega_{19}^2\omega_7c_s^4 - 24\omega_7^2c_s^2v_3^2 - 8\omega_{19}^2\omega_7^2c_s^2 - 18\omega_{19}\omega_7^3v_3^4 - 3\omega_{19}^2\omega_7^3v_3^2 - 24\omega_{19}\omega_7^2c_s^4)\frac{\rho}{24\omega_{19}^2\omega_7^3}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z^4v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^4v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^4v_2} =$
$(12\omega_{19}^2\omega_7c_s^2 - 12\omega_{19}^2\omega_7^2c_s^2v_3^2 + 24\omega_{19}^2c_s^4 - 36\omega_7^3v_3^2 + 24\omega_{19}\omega_7c_s^4 - 72\omega_{19}\omega_7^3c_s^2v_3^2 + 24\omega_{19}\omega_7^2c_s^2 + 3\omega_{19}^2\omega_7^3v_3^4 + 30\omega_{19}\omega_7^3v_3^2 + 24\omega_{19}^2\omega_7^2c_s^4 + 72\omega_7^2v_3^2 + 72\omega_{19}\omega_7c_s^2v_3^2 + 108\omega_7^3c_s^2v_3^2 - 3\omega_{19}^2\omega_7^3c_s^4 - 72\omega_{19}\omega_7^2v_3^2 - 12\omega_{19}^2\omega_7^2v_3^4 - 6\omega_{19}\omega_7^3c_s^2 + 144\omega_{19}\omega_7^2c_s^2v_3^2 - 72\omega_7^2v_3^4 + 6\omega_{19}\omega_7^3c_s^4 + 12\omega_{19}^2\omega_7^2v_3^2 + 6\omega_{19}^2\omega_7^3c_s^2v_3^2 + 72\omega_{19}\omega_7^2v_3^4 + \omega_{19}^2\omega_7^3c_s^2 - 36\omega_{19}^2\omega_7c_s^2v_3^2 + 36\omega_7^3v_3^4 - 24\omega_{19}\omega_7c_s^2 - 48\omega_{19}^2\omega_7c_s^4 - 216\omega_7^2c_s^2v_3^2 - 8\omega_{19}^2\omega_7^2c_s^2 - 30\omega_{19}\omega_7^3v_3^4 - 3\omega_{19}^2\omega_7^3v_3^2 - 24\omega_{19}\omega_7^2c_s^4)\frac{\rho}{24\omega_{19}^2\omega_7^3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z^4v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^4v_2}$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_z v_2} = (72\omega_3\omega_{10}c_s^2v_3^2 + 108\omega_3^3c_s^2v_3^2 + 12\omega_3^2\omega_{10}^2v_3^2 - 6\omega_3^3\omega_{10}c_s^2 - 36\omega_3^3v_3^2 - 3\omega_3^3\omega_{10}^2c_s^4 + 72\omega_3^2\omega_{10}v_3^4 + 6\omega_3^3\omega_{10}^2c_s^2v_3^2 - 8\omega_3^2\omega_{10}^2c_s^2 - 12\omega_3^2\omega_{10}^2c_s^2v_3^2 - 48\omega_3\omega_{10}^2c_s^4 + 30\omega_3^3\omega_{10}v_3^2 - 24\omega_3\omega_{10}c_s^2 + 3\omega_3^3\omega_{10}^2v_3^4 - 24\omega_3^2\omega_{10}c_s^4 + 72\omega_3^2v_3^2 + 12\omega_3\omega_{10}^2c_s^2 + 24\omega_{10}^2c_s^4 - 30\omega_3^3\omega_{10}v_3^4 + 24\omega_3^2\omega_{10}^2c_s^4 + 144\omega_3^2\omega_{10}c_s^2v_3^2 - 72\omega_3^2v_3^4 + 24\omega_3^2\omega_{10}c_s^2 + 24\omega_3\omega_{10}c_s^4 - 216\omega_3^2c_s^2v_3^2 - 3\omega_3^3\omega_{10}^2v_3^2 + 6\omega_3^3\omega_{10}c_s^4 - 36\omega_3\omega_{10}^2c_s^2v_3^2 - 12\omega_3^2\omega_{10}^2v_3^4 - 72\omega_3^2\omega_{10}v_3^2 - 72\omega_3^3\omega_{10}c_s^2v_3^2 + 36\omega_3^3v_3^4 + \omega_3^3\omega_{10}^2c_s^2)\frac{\rho}{24\omega_3^3\omega_{10}^2}$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_z v_2} = (-3\omega_3^2\omega_4^2\omega_1^3v_3^2 - 12\omega_3^2\omega_4c_s^4\omega_1^2 + 36\omega_3\omega_4\omega_1^2v_3^2 + 36\omega_3\omega_4^2\omega_1^2v_3^4 - 12\omega_3^2\omega_4^2c_s^2\omega_1^2v_3^2 + 12\omega_3^2\omega_4^2c_s^2\omega_1 - 15\omega_3^2\omega_4\omega_1^3v_3^4 + 12\omega_3\omega_4^2c_s^4\omega_1 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_3^2 + 27\omega_3^2c_s^2\omega_1^3v_3^2 + 3\omega_3^2\omega_4c_s^4\omega_1^3 + 24\omega_3^2\omega_4^2c_s^4 + 27\omega_4^2c_s^2\omega_1^3v_3^2 - 9\omega_4^2\omega_1^3v_3^2 - 18\omega_3^2\omega_1^2v_3^4 + \omega_3^2\omega_4^2c_s^2\omega_1^3 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 36\omega_3^2\omega_4\omega_1^2v_3^4 - 15\omega_3^2\omega_4^2\omega_1^3v_3^4 - 12\omega_3^2\omega_4^2c_s^4\omega_1^2 - 18\omega_3\omega_4\omega_1^3v_3^2 + 12\omega_3^2\omega_4^2\omega_1^2v_3^2 - 54\omega_4^2c_s^2\omega_1^2v_3^2 + 9\omega_3^2\omega_1^3v_3^4 + 18\omega_4^2\omega_1^2v_3^2 + 36\omega_3^2\omega_4c_s^2\omega_1v_3^2 - 8\omega_3^2\omega_4^2c_s^2\omega_1^2 + 12\omega_3^2\omega_4c_s^4\omega_1 - 36\omega_3\omega_4^2c_s^2\omega_1^3v_3^2 - 54\omega_3^2c_s^2\omega_1^2v_3^2 + 3\omega_3\omega_4^2c_s^4\omega_1^3 + 72\omega_3^2\omega_4c_s^2\omega_1^2v_3^2 + 18\omega_3\omega_4\omega_1^3v_3^4 - 12\omega_3\omega_4^2c_s^2\omega_1 - 12\omega_3^2\omega_4^2\omega_1^2v_3^4 - 3\omega_3^2\omega_4c_s^2\omega_1^3 - 36\omega_3^2\omega_4\omega_1^2v_3^2 + 15\omega_3\omega_4^2\omega_1^3v_3^2 + 12\omega_3^2\omega_4c_s^2\omega_1^2 - 108\omega_3\omega_4c_s^2\omega_1^2v_3^2 - 18\omega_4^2\omega_1^2v_3^4 - 9\omega_3^2\omega_1^3v_3^2 - 48\omega_3^2\omega_4^2c_s^4\omega_1 - 36\omega_3\omega_4^2\omega_1^2v_3^2 + 36\omega_3\omega_4^2c_s^2\omega_1v_3^2 + 15\omega_3^2\omega_4\omega_1^3v_3^2 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2 - 12\omega_3^2\omega_4c_s^2\omega_1 + 3\omega_3^2\omega_4^2\omega_1^3v_3^4 - 3\omega_3\omega_4^2c_s^2\omega_1^3 - 36\omega_3^2\omega_4c_s^2\omega_1^3v_3^2 - 36\omega_3\omega_4\omega_1^2v_3^4 - 3\omega_3^2\omega_4^2c_s^4\omega_1^3 + 54\omega_3\omega_4c_s^2\omega_1^3v_3^2 + 18\omega_3^2\omega_1^2v_3^2 + 9\omega_4^2\omega_1^3v_3^4 + 12\omega_3\omega_4^2c_s^2\omega_1^2 - 36\omega_3^2\omega_4^2c_s^2\omega_1v_3^2)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$$

coefficient $C^{(2)}_{\mathrm{D}^4_z v_3}$ at $\frac{\partial^4 v_3}{\partial x_3^4}$:

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}^4_z v_3} = (-4 - 3c_s^2\omega - 5\omega v_3^2 + 2\omega + 6c_s^2 + 10v_3^2)\frac{\rho v_2 v_3}{12\omega}$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3} = (72\omega_{19}^2\omega_7c_s^2 - 120\omega_{19}^2\omega_7c_s^2\omega_{11} + 24\omega_7\omega_{11}^2 + 61\omega_{19}^2\omega_7^2\omega_{11}v_3^2 + 2\omega_{19}^2\omega_7^2\omega_{11}^2 + 24\omega_7^2\omega_{11}^2v_3^2 - 33\omega_{19}\omega_7^2c_s^2\omega_{11}^2 - 72\omega_{19}\omega_7\omega_{11}^2 - 60\omega_{19}c_s^2\omega_{11}^2 + 24\omega_{19}\omega_7\omega_{11} - 72\omega_{19}\omega_7\omega_{11}v_3^2 + 120\omega_{19}^2\omega_7v_3^2 - 36\omega_{19}^2\omega_{11} + 84\omega_{19}^2\omega_{11}v_3^2 + 12\omega_{19}\omega_7^2c_s^2\omega_{11} - 51\omega_{19}\omega_7^2\omega_{11}^2v_3^2 - 25\omega_{19}^2\omega_7^2\omega_{11} + 24\omega_7^2c_s^2\omega_{11}^2 - 84\omega_{19}\omega_{11}^2v_3^2 + 60\omega_{19}^2c_s^2\omega_{11} + 72\omega_{19}^2\omega_7\omega_{11} + 36\omega_{19}\omega_7^2\omega_{11}v_3^2 - 24\omega_{19}\omega_7c_s^2\omega_{11} - 60\omega_{19}^2\omega_7^2v_3^2 - 48\omega_7c_s^2\omega_{11}^2 + 168\omega_{19}\omega_7^2\omega_{11}^2v_3^2 - 12\omega_{19}\omega_{11}^2\omega_{11} + 24\omega_{19}^2\omega_7^2 - 3\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2 - 48\omega_{19}^2\omega_7 + 39\omega_{19}^2\omega_7^2c_s^2\omega_{11} + 21\omega_{19}\omega_7^2\omega_{11}^2 + 36\omega_{19}\omega_{11}^2 - 168\omega_{19}^2\omega_7\omega_{11}v_3^2 + 120\omega_{19}\omega_7c_s^2\omega_{11}^2 - 48\omega_7\omega_{11}^2v_3^2 - 36\omega_{19}^2\omega_7^2c_s^2 - 5\omega_{19}^2\omega_7^2\omega_{11}^2v_3^2 - 12\omega_7^2\omega_{11}^2)\frac{\rho v_2 v_3}{12\omega_{19}^2\omega_7^2\omega_{11}^2}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^4_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_3} = (-4 - 3c_s^2\omega_{11} + 2\omega_{11} - 5\omega_{11}v_3^2 + 6c_s^2 + 10v_3^2)\frac{\rho v_2 v_3}{12\omega_{11}}$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^4_z v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_3}$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_z v_3} = (-4 + 2\omega_6 - 3\omega_6c_s^2 + 6c_s^2 - 5\omega_6v_3^2 + 10v_3^2)\frac{\rho v_2 v_3}{12\omega_6}$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_z v_3} = (10\omega_1v_3^2 - 15\omega_1\omega_2v_3^2 + 6\omega_1\omega_2 - 4\omega_1 + 6c_s^2\omega_1 - 8\omega_2 + 20\omega_2v_3^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2)\frac{\rho v_2 v_3}{36\omega_1\omega_2}$$

3.4 Conservation of momentum: ρv_3

$$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + v_1v_3\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \rho v_3\frac{\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \rho v_1\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_1} + v_2v_3\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \rho v_3\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \rho v_2\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_2} + (c_s^2 + v_3^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + 2\rho v_3\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + C^{(3)}_{\mathrm{D}_x\rho,\mathrm{D}_xv_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + C^{(3)}_{\mathrm{D}_x\rho,\mathrm{D}_zv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + C^{(3)}_{\mathrm{D}_xv_1,\mathrm{D}_zv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_3} + C^{(3)}_{\mathrm{D}_y\rho,\mathrm{D}_yv_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + C^{(3)}_{\mathrm{D}_y\rho,\mathrm{D}_zv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3} + C^{(3)}_{\mathrm{D}_yv_2,\mathrm{D}_zv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial v_2}{\partial x_2}\frac{\partial v_2}{\partial x_3} + C^{(3)}_{\mathrm{D}_z\rho,\mathrm{D}_xv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_1} + C^{(3)}_{\mathrm{D}_z\rho,\mathrm{D}_yv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_2} + C^{(3)}_{\mathrm{D}_z\rho,\mathrm{D}_zv_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + C^{(3)}_{\mathrm{D}_zv_3,\mathrm{D}_zv_3}\frac{\delta_l^2}{\delta_t}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + C^{(3)}_{\mathrm{D}_x^2v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} + C^{(3)}_{\mathrm{D}_y^2v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_3}{\partial x_2^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_1\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_zv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_zv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_2}{\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_y^2\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_2^2} + C^{(3)}_{\mathrm{D}_z^2v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_3}{\partial x_3^2} + C^{(3)}_{\mathrm{D}_x^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + C^{(3)}_{\mathrm{D}_x^3v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C^{(3)}_{\mathrm{D}_x^3v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1^3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_yv_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_yv_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2^2} + C^{(3)}_{\mathrm{D}_y^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C^{(3)}_{\mathrm{D}_y^3v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C^{(3)}_{\mathrm{D}_y^3v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2^3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_zv_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_zv_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_zv_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_zv_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_zv_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_zv_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_z^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C^{(3)}_{\mathrm{D}_z^3v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + C^{(3)}_{\mathrm{D}_x^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C^{(3)}_{\mathrm{D}_x^4v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C^{(3)}_{\mathrm{D}_x^4v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^4} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_yv_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_yv_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_yv_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_2} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} +$$

$$C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_2^3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^3} +$$
$$C^{(3)}_{\mathrm{D}_y^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2^4} + C^{(3)}_{\mathrm{D}_y^4 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C^{(3)}_{\mathrm{D}_y^4 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^4} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^3\partial x_3} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C^{(3)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2^3\partial x_3} + C^{(3)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C^{(3)}_{\mathrm{D}_y^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_3^2} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} +$$
$$C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2^2\partial x_3^2} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_3^3} +$$
$$C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2\partial x_3^3} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} +$$
$$C^{(3)}_{\mathrm{D}_z^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_3^4} + C^{(3)}_{\mathrm{D}_z^4 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

coefficient $C^{(3)}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3}$ **at** $\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = (-2+\omega)\frac{c_s^2}{2\omega}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = (-2+\omega_6)\frac{c_s^2}{2\omega_6}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = (-2+\omega_2)\frac{c_s^2}{2\omega_2}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$$

coefficient $C^{(3)}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1}$ **at** $\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = (-2+\omega)\frac{c_s^2}{2\omega}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = (-2+\omega_6)\frac{c_s^2}{2\omega_6}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = (-2+\omega_2)\frac{c_s^2}{2\omega_2}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = (-2\omega_1 - 6v_1^2\omega_2 + 6c_s^2\omega_1 + 2\omega_2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 + 6\omega_1 v_1^2)\frac{1}{6\omega_1\omega_2}$$

coefficient $C^{(3)}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1}$ **at** $\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = (\omega_1 - \omega_2)\frac{2\rho v_1}{\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3}$ **at** $\frac{\partial \rho}{\partial x_2}\frac{\partial v_3}{\partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3} = (-2 + \omega)\frac{c_s^2}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3} = (-2 + \omega_7)\frac{c_s^2}{2\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3} = (-2 + \omega_3)\frac{c_s^2}{2\omega_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y \rho,\mathrm{D}_y v_3} = (-2 + \omega_1)\frac{c_s^2}{2\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2}$ **at** $\frac{\partial \rho}{\partial x_2}\frac{\partial v_2}{\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2} = (-2 + \omega)\frac{c_s^2}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2} = (-2 + \omega_7)\frac{c_s^2}{2\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2} = (-2 + \omega_3)\frac{c_s^2}{2\omega_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y \rho,\mathrm{D}_z v_2} = (6\omega_1 v_2^2 - 6v_2^2\omega_2 - 2\omega_1 + 6c_s^2\omega_1 + 2\omega_2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2}$ **at** $\frac{\partial v_2}{\partial x_2}\frac{\partial v_2}{\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = (\omega_1 - \omega_2)\frac{2\rho v_2}{\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z \rho,\mathrm{D}_x v_1}$ **at** $\frac{\partial \rho}{\partial x_3}\frac{\partial v_1}{\partial x_1}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_1} = (-\omega_1 - 3v_1^2\omega_2 + c_s^2\omega_1 + \omega_2 - c_s^2\omega_2 + 3\omega_1 v_1^2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z\rho,\mathrm{D}_y v_2}$ **at** $\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_2} = (3\omega_1 v_2^2 - 3v_2^2\omega_2 - \omega_1 + c_s^2\omega_1 + \omega_2 - c_s^2\omega_2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3}$ **at** $\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3} = (-2 - 2c_s^2\omega - 3\omega v_3^2 + \omega + 4c_s^2 + 6v_3^2)\frac{1}{\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3} = (-2 - 2c_s^2\omega_{11} + \omega_{11} - 3\omega_{11}v_3^2 + 4c_s^2 + 6v_3^2)\frac{1}{\omega_{11}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3} = (-2 + \omega_6 - 2\omega_6 c_s^2 + 4c_s^2 - 3\omega_6 v_3^2 + 6v_3^2)\frac{1}{\omega_6}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3} = (6\omega_1 v_3^2 - 9\omega_1\omega_2 v_3^2 + 3\omega_1\omega_2 - 2\omega_1 + 4c_s^2\omega_1 - 4\omega_2 + 12\omega_2 v_3^2 + 8c_s^2\omega_2 - 6c_s^2\omega_1\omega_2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3}$ **at** $\left(\frac{\partial v_3}{\partial x_3}\right)^2$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = (2 - \omega)\frac{3\rho v_3}{\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = (2 - \omega_{11})\frac{3\rho v_3}{\omega_{11}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = (2 - \omega_6)\frac{3\rho v_3}{\omega_6}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = (-3\omega_1\omega_2 + 2\omega_1 + 4\omega_2)\frac{\rho v_3}{\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2 v_3}$ **at** $\frac{\partial^2 v_3}{\partial x_1^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2 v_3} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_3} = (-2+\omega_6)\frac{c_s^2\rho}{2\omega_6}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2 v_3} = (-2+\omega_2)\frac{c_s^2\rho}{2\omega_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2 v_3} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_y^2 v_3}$ **at** $\frac{\partial^2 v_3}{\partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2 v_3} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_3} = (-2+\omega_7)\frac{c_s^2\rho}{2\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2 v_3} = (-2+\omega_3)\frac{c_s^2\rho}{2\omega_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2 v_3} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z\rho}$ **at** $\frac{\partial^2\rho}{\partial x_1\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z\rho} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1 v_1^2)\frac{v_1}{3\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z v_1}$ **at** $\frac{\partial^2 v_1}{\partial x_1\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z v_1} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_1} = (-2+\omega_6)\frac{c_s^2\rho}{2\omega_6}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z v_1} = (-2+\omega_2)\frac{c_s^2\rho}{2\omega_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z v_1} = (-2\omega_1 - 6v_1^2\omega_2 + 2c_s^2\omega_1 + 2\omega_2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 + 6\omega_1 v_1^2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^2\rho}{\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{v_2}{3\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^2 v_2}{\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z v_2} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_2} = (-2+\omega_7)\frac{c_s^2\rho}{2\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z v_2} = (-2+\omega_3)\frac{c_s^2\rho}{2\omega_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z v_2} = (6\omega_1 v_2^2 - 6v_2^2\omega_2 - 2\omega_1 + 2c_s^2\omega_1 + 2\omega_2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^2\rho}{\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z^2\rho} = (-2 - 3c_s^2\omega - \omega v_3^2 + \omega + 6c_s^2 + 2v_3^2)\frac{v_3}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2\rho} = (-2 - 3c_s^2\omega_{11} + \omega_{11} - \omega_{11}v_3^2 + 6c_s^2 + 2v_3^2)\frac{v_3}{2\omega_{11}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z^2\rho} = (-2 + \omega_6 - 3\omega_6 c_s^2 + 6c_s^2 - \omega_6 v_3^2 + 2v_3^2)\frac{v_3}{2\omega_6}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z^2\rho} = (2\omega_1 v_3^2 - 3\omega_1\omega_2 v_3^2 + 3\omega_1\omega_2 - 2\omega_1 + 6c_s^2\omega_1 - 4\omega_2 + 4\omega_2 v_3^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2)\frac{v_3}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}^2_z v_3}$ **at** $\frac{\partial^2 v_3}{\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^2_z v_3} = (-2 - c_s^2\omega - 3\omega v_3^2 + \omega + 2c_s^2 + 6v_3^2)\frac{\rho}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_z v_3} = (-2 - c_s^2\omega_{11} + \omega_{11} - 3\omega_{11}v_3^2 + 2c_s^2 + 6v_3^2)\frac{\rho}{2\omega_{11}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^2_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^2_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_z v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^2_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^2_z v_3} = (-2 + \omega_6 - \omega_6 c_s^2 + 2c_s^2 - 3\omega_6 v_3^2 + 6v_3^2)\frac{\rho}{2\omega_6}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^2_z v_3} = (6\omega_1 v_3^2 - 9\omega_1\omega_2 v_3^2 + 3\omega_1\omega_2 - 2\omega_1 + 2c_s^2\omega_1 - 4\omega_2 + 12\omega_2 v_3^2 + 4c_s^2\omega_2 - 3c_s^2\omega_1\omega_2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}^3_x \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x \rho} = (-1 + v_1^2 + 3c_s^2)\frac{v_1 v_3}{12}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x \rho} = (-6\omega_6\omega_{13}v_1^2 + 12\omega_{13}v_1^2 - 12\omega_{13} + 3\omega_6\omega_{13}c_s^2\omega_9 + 36\omega_{13}c_s^2 + 18\omega_6 c_s^2\omega_9 + 6\omega_6\omega_{13} - 18\omega_6\omega_{13}c_s^2 - 36c_s^2\omega_9 - 12v_1^2\omega_9 - 6\omega_6\omega_9 - \omega_6\omega_{13}\omega_9 + 6\omega_6 v_1^2\omega_9 + 12\omega_9 + \omega_6\omega_{13}v_1^2\omega_9)\frac{v_1 v_3}{12\omega_6\omega_{13}\omega_9}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_x \rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x \rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_x \rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_x \rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_x \rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_x \rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

coefficient $C^{(3)}_{\mathrm{D}^3_x v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_1} = (-1 + 3v_1^2 + c_s^2)\frac{\rho v_3}{12}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1} = (-18\omega_6\omega_{13}v_1^2 + 36\omega_{13}v_1^2 - 12\omega_{13} + \omega_6\omega_{13}c_s^2\omega_9 + 12\omega_{13}c_s^2 + 6\omega_6 c_s^2\omega_9 + 6\omega_6\omega_{13} - 6\omega_6\omega_{13}c_s^2 - 12c_s^2\omega_9 - 36v_1^2\omega_9 - 6\omega_6\omega_9 - \omega_6\omega_{13}\omega_9 + 18\omega_6 v_1^2\omega_9 + 12\omega_9 + 3\omega_6\omega_{13}v_1^2\omega_9)\frac{\rho v_3}{12\omega_6\omega_{13}\omega_9}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_x v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_x v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_x v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_x v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

coefficient $C^{(3)}_{\mathrm{D}^3_x v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_3} = (6 - 6v_1^2 + 18c_s^2\omega + \omega^2 - \omega^2 v_1^2 - 3c_s^2\omega^2 - 6\omega + 6\omega v_1^2 - 18c_s^2)\frac{\rho v_1}{6\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x v_3} = (6\omega_6 - 6\omega_6 v_1^2 + 3\omega_6\omega_{13}v_1^2 + 3\omega_6^2 c_s^2 - 3\omega_6^2 - 3\omega_6^2\omega_{13}c_s^2 + \omega_6^2\omega_{13} - 12\omega_{13}c_s^2 - 3\omega_6\omega_{13} + 15\omega_6\omega_{13}c_s^2 - 6\omega_6 c_s^2 - \omega_6^2\omega_{13}v_1^2 + 3\omega_6^2 v_1^2)\frac{\rho v_1}{6\omega_6^2\omega_{13}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3 v_3} = (6 - 6v_1^2 - 3\omega_6 + 3\omega_6 v_1^2 - \omega_6\omega_{13}v_1^2 + 3\omega_{13}v_1^2 - 3\omega_{13} + 9\omega_{13}c_s^2 + \omega_6\omega_{13} - 3\omega_6\omega_{13}c_s^2 + 9\omega_6 c_s^2 - 18c_s^2)\frac{\rho v_1}{6\omega_6\omega_{13}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3 v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3 v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3 v_3} = (6 - 6v_1^2 - 3c_s^2\omega_2\omega_{12} - v_1^2\omega_2\omega_{12} + 3v_1^2\omega_2 + 9c_s^2\omega_{12} - 18c_s^2 + \omega_2\omega_{12} + 3v_1^2\omega_{12} - 3\omega_2 + 9c_s^2\omega_2 - 3\omega_{12})\frac{\rho v_1}{6\omega_2\omega_{12}}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3 v_3} = (-2\omega_3\omega_4\omega_1 v_1^2 + 6\omega_3 - 18\omega_4 c_s^2 + 3\omega_3\omega_1 v_1^2 - 3\omega_4\omega_1 - 6\omega_3\omega_4 c_s^2\omega_1 - 6\omega_3 v_1^2 + 9\omega_3 c_s^2\omega_1 + 6\omega_4 + 6\omega_3\omega_4 v_1^2 - 3\omega_3\omega_1 + 2\omega_3\omega_4\omega_1 - 6\omega_4 v_1^2 - 6\omega_3\omega_4 + 3\omega_4\omega_1 v_1^2 + 18\omega_3\omega_4 c_s^2 - 18\omega_3 c_s^2 + 9\omega_4 c_s^2\omega_1)\frac{\rho v_1}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1^2 \partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = \frac{-c_s^2\rho v_3}{6}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = (-6\omega_6\omega_7\omega_5 - \omega_6\omega_7\omega_8\omega_5 - 6\omega_7\omega_8 + 6\omega_6\omega_7\omega_8 + 6\omega_7\omega_5 - 6\omega_6\omega_8 + 6\omega_6\omega_5)\frac{c_s^2\rho v_3}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1^2 \partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = (-\omega_7\omega_8 + \omega_6\omega_7\omega_8 - \omega_6\omega_8 - \omega_6^2\omega_7 + \omega_6^2 + \omega_6\omega_7)\frac{c_s^2\rho v_2}{\omega_6^2\omega_7\omega_8}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = (-2\omega_3 - 6\omega_4 c_s^2 - 2\omega_4 v_2^2 - \omega_4\omega_1 + \omega_4\omega_1 v_2^2 - 3\omega_3 c_s^2\omega_1 + 2\omega_4 + \omega_3\omega_1 + 2\omega_3 v_2^2 - \omega_3\omega_1 v_2^2 + 6\omega_3 c_s^2 + 3\omega_4 c_s^2\omega_1)\frac{\rho v_2}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1 \partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = \frac{-c_s^2\rho v_3}{6}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (-6\omega_6\omega_7\omega_5 - \omega_6\omega_7\omega_8\omega_5 - 6\omega_7\omega_8 + 6\omega_6\omega_7\omega_8 + 6\omega_7\omega_5 - 6\omega_6\omega_8 + 6\omega_6\omega_5)\frac{c_s^2\rho v_3}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1 \partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = (-\omega_7\omega_8 + \omega_6\omega_7\omega_8 - \omega_6\omega_8 + \omega_6\omega_7 + \omega_7^2 - \omega_6\omega_7^2)\frac{c_s^2\rho v_1}{\omega_6\omega_7^2\omega_8}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = (-2\omega_3 - 6\omega_4 c_s^2 - \omega_3\omega_1 v_1^2 - \omega_4\omega_1 + 2\omega_3 v_1^2 - 3\omega_3 c_s^2\omega_1 + 2\omega_4 + \omega_3\omega_1 - 2\omega_4 v_1^2 + \omega_4\omega_1 v_1^2 + 6\omega_3 c_s^2 + 3\omega_4 c_s^2\omega_1)\frac{\rho v_1}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_y^3\rho}$ **at** $\frac{\partial^3 \rho}{\partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3\rho} = (-1 + 3c_s^2 + v_2^2)\frac{v_2 v_3}{12}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho} = (12\omega_{16}v_2^2 - 18\omega_{16}\omega_7 c_s^2 + \omega_{16}\omega_{10}\omega_7 v_2^2 - 12\omega_{16} + 12\omega_{10} + 6\omega_{16}\omega_7 + 36\omega_{16}c_s^2 + 3\omega_{16}\omega_{10}\omega_7 c_s^2 - \omega_{16}\omega_{10}\omega_7 - 6\omega_{16}\omega_7 v_2^2 - 36\omega_{10}c_s^2 - 6\omega_{10}\omega_7 + 6\omega_{10}\omega_7 v_2^2 + 18\omega_{10}\omega_7 c_s^2 - 12\omega_{10}v_2^2)\frac{v_2 v_3}{12\omega_{16}\omega_{10}\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^3\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^3\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

coefficient $C^{(3)}_{\mathrm{D}_y^3 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3 v_2} = (-1 + c_s^2 + 3v_2^2)\frac{\rho v_3}{12}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_2} = (36\omega_{16}v_2^2 - 6\omega_{16}\omega_7 c_s^2 + 3\omega_{16}\omega_{10}\omega_7 v_2^2 - 12\omega_{16} + 12\omega_{10} + 6\omega_{16}\omega_7 + 12\omega_{16}c_s^2 + \omega_{16}\omega_{10}\omega_7 c_s^2 - \omega_{16}\omega_{10}\omega_7 - 18\omega_{16}\omega_7 v_2^2 - 12\omega_{10}c_s^2 - 6\omega_{10}\omega_7 + 18\omega_{10}\omega_7 v_2^2 + 6\omega_{10}\omega_7 c_s^2 - 36\omega_{10}v_2^2)\frac{\rho v_3}{12\omega_{16}\omega_{10}\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^3 v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^3 v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3 v_2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^3 v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3 v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^3 v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3 v_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

coefficient $C^{(3)}_{\mathrm{D}^3_y v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y v_3} = (6 + 18c_s^2\omega + \omega^2 + 6\omega v_2^2 - 3c_s^2\omega^2 - 6\omega - \omega^2 v_2^2 - 18c_s^2 - 6v_2^2)\frac{\rho v_2}{6\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y v_3} = (3\omega_7^2 c_s^2 + \omega_{16}\omega_7^2 + 15\omega_{16}\omega_7 c_s^2 + 3\omega_7^2 v_2^2 - 3\omega_{16}\omega_7 - 12\omega_{16}c_s^2 + 6\omega_7 + 3\omega_{16}\omega_7 v_2^2 - \omega_{16}\omega_7^2 v_2^2 - 6\omega_7 v_2^2 - 3\omega_{16}\omega_7^2 c_s^2 - 3\omega_7^2 - 6\omega_7 c_s^2)\frac{\rho v_2}{6\omega_{16}\omega_7^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_y v_3} = (6 + 3\omega_{16}v_2^2 - 3\omega_{16}\omega_7 c_s^2 - 3\omega_{16} + \omega_{16}\omega_7 + 9\omega_{16}c_s^2 - 3\omega_7 - \omega_{16}\omega_7 v_2^2 + 3\omega_7 v_2^2 - 18c_s^2 - 6v_2^2 + 9\omega_7 c_s^2)\frac{\rho v_2}{6\omega_{16}\omega_7}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_y v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_y v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_y v_3} = (6 - 3\omega_3 + \omega_3\omega_{11} + 9c_s^2\omega_{11} - \omega_3\omega_{11}v_2^2 + 3\omega_3 v_2^2 - 3\omega_{11} + 3\omega_{11}v_2^2 - 3\omega_3 c_s^2\omega_{11} - 18c_s^2 + 9\omega_3 c_s^2 - 6v_2^2)\frac{\rho v_2}{6\omega_3\omega_{11}}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_y v_3} = (6\omega_3 - 18\omega_4 c_s^2 - 6\omega_4 v_2^2 - 3\omega_4\omega_1 - 6\omega_3\omega_4 c_s^2\omega_1 + 3\omega_4\omega_1 v_2^2 + 9\omega_3 c_s^2\omega_1 + 6\omega_4 - 3\omega_3\omega_1 - 6\omega_3 v_2^2 + 6\omega_3\omega_4 v_2^2 + 2\omega_3\omega_4\omega_1 - 6\omega_3\omega_4 + 18\omega_3\omega_4 c_s^2 + 3\omega_3\omega_1 v_2^2 - 18\omega_3 c_s^2 + 9\omega_4 c_s^2\omega_1 - 2\omega_3\omega_4\omega_1 v_2^2)\frac{\rho v_2}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}^2_x \mathrm{D}_z \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1^2 \partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = (-12 - \omega^2 + 12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = (-12 + 12\omega_6 - \omega_6^2)\frac{c_s^4}{6\omega_6^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = (-12 + 12\omega_2 - \omega_2^2)\frac{c_s^4}{6\omega_2^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = (-c_s^4\omega_1^2\omega_2^2 - 14c_s^4\omega_2^2 - 3\omega_1^2 v_1^4\omega_2 - 2\omega_1^2 v_1^2 + 6c_s^2\omega_1 v_1^2\omega_2 - 3\omega_1 v_1^2\omega_2^2 + 2c_s^2\omega_1^2\omega_2 + 15c_s^2\omega_1 v_1^2\omega_2^2 - 18c_s^2 v_1^2\omega_2^2 + 2c_s^4\omega_1^2 - 2\omega_1 v_1^2\omega_2 - 2c_s^4\omega_1^2\omega_2 - 4v_1^4\omega_2^2 - 2c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_2^2 + 3\omega_1^2 v_1^2\omega_2 + 12c_s^2\omega_1^2 v_1^2 + 3\omega_1 v_1^4\omega_2^2 + 2\omega_1 v_1^4\omega_2 - 2c_s^2\omega_1^2 + 2\omega_1^2 v_1^4 + 4v_1^2\omega_2^2 - 15c_s^2\omega_1^2 v_1^2\omega_2 + 14c_s^4\omega_1\omega_2^2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}^2_x \mathrm{D}_z v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^2 \partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = (2\omega_6 - 2\omega_{13} - \omega_6^2 + \omega_6\omega_{13})\frac{c_s^2\rho v_1}{\omega_6^2\omega_{13}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = (8\omega_1^2 v_1^2 + 11\omega_1 v_1^2\omega_2^2 - 5\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 + 6\omega_1 v_1^2\omega_2 - 2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 10c_s^2\omega_2^2 - 11\omega_1^2 v_1^2\omega_2 + 8c_s^2\omega_1^2 + 2c_s^2\omega_1\omega_2 - 14v_1^2\omega_2^2 + 6\omega_2^2)\frac{\rho v_1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1^2 \partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = \frac{-c_s^2 \rho v_3}{6}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (-\omega_6^2\omega_{11}\omega_{18} + 12\omega_6\omega_{11} + 12\omega_6^2 - 12\omega_6\omega_{18} + 12\omega_6\omega_{11}\omega_{18} - 12\omega_6^2\omega_{11} - 12\omega_{11}\omega_{18})\frac{c_s^2\rho v_3}{6\omega_6^2\omega_{11}\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1 \partial x_2 \partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = (\omega_1^2 v_1^2 + v_2^2\omega_2^2 - 2\omega_1 v_1^2\omega_2 + 4\omega_1\omega_2 - 2\omega_1^2 + 6c_s^2\omega_2^2 - 2\omega_1 v_2^2\omega_2 + 6c_s^2\omega_1^2 - 12c_s^2\omega_1\omega_2 + v_1^2\omega_2^2 + \omega_1^2 v_2^2 - 2\omega_2^2)\frac{v_1 v_2}{3\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1 \partial x_2 \partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = (-\omega_7\omega_8 + \omega_6\omega_7\omega_8 - \omega_6\omega_8 - \omega_6^2\omega_7 + \omega_6^2 + \omega_6\omega_7)\frac{c_s^2\rho v_2}{\omega_6^2\omega_7\omega_8}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = (18\omega_3 c_s^2\omega_1\omega_2^2 + 2\omega_3\omega_4\omega_1^2 v_2^2 - 12\omega_4 c_s^2\omega_1\omega_2^2 + 6\omega_3\omega_4 v_1^2\omega_2^2 + \omega_3\omega_4\omega_1 v_2^2\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 - 4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 8\omega_3\omega_4 c_s^2\omega_1^2 + 4\omega_4\omega_1\omega_2^2 - 4\omega_3\omega_4 c_s^2\omega_2^2 + 3\omega_3\omega_4 c_s^2\omega_1\omega_2^2 - 4\omega_4\omega_1 v_2^2\omega_2^2 + \omega_3\omega_4\omega_1^2\omega_2 + 6\omega_3\omega_1 v_2^2\omega_2^2 - 6\omega_4 c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1\omega_2 - \omega_3\omega_4\omega_1^2 v_2^2\omega_2 - 12\omega_3\omega_4\omega_1 v_1^2\omega_2 - 3\omega_4\omega_1^2\omega_2^2 + 3\omega_4\omega_1^2 v_2^2\omega_2^2 - 3\omega_3\omega_1^2 v_2^2\omega_2^2 - 3\omega_3\omega_4 c_s^2\omega_1^2\omega_2 - 6\omega_3\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 2\omega_4\omega_1^2 v_2^2\omega_2 - \omega_3\omega_4\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1^2 - 2\omega_3\omega_4 v_2^2\omega_2^2 + 9\omega_4 c_s^2\omega_1^2\omega_2^2 + 6\omega_3\omega_4\omega_1^2 v_1^2)\frac{\rho v_2}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1 \partial x_2 \partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = (-\omega_7\omega_8 + \omega_6\omega_7\omega_8 - \omega_6\omega_8 + \omega_6\omega_7 + \omega_7^2 - \omega_6\omega_7^2)\frac{c_s^2\rho v_1}{\omega_6\omega_7^2\omega_8}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = (18\omega_3 c_s^2\omega_1\omega_2^2 + 6\omega_3\omega_4\omega_1^2 v_2^2 - 12\omega_4 c_s^2\omega_1\omega_2^2 - 2\omega_4\omega_1^2 v_1^2\omega_2 - 2\omega_3\omega_4 v_1^2\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 - 4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 8\omega_3\omega_4 c_s^2\omega_1^2 + 4\omega_4\omega_1\omega_2^2 - \omega_3\omega_4\omega_1^2 v_1^2\omega_2 - 12\omega_3\omega_4\omega_1 v_2^2\omega_2 - 4\omega_3\omega_4 c_s^2\omega_2^2 + 3\omega_3\omega_4 c_s^2\omega_1\omega_2^2 + 3\omega_4\omega_1^2 v_1^2\omega_2^2 + \omega_3\omega_4\omega_1^2\omega_2 - 3\omega_3\omega_1^2 v_1^2\omega_2^2 - 6\omega_4 c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1\omega_2 - 3\omega_4\omega_1^2\omega_2^2 - 4\omega_4\omega_1 v_1^2\omega_2^2 + 6\omega_3\omega_1 v_1^2\omega_2^2 - 3\omega_3\omega_4 c_s^2\omega_1^2\omega_2 - 6\omega_3\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - \omega_3\omega_4\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1^2 + \omega_3\omega_4\omega_1 v_1^2\omega_2^2 + 6\omega_3\omega_4 v_2^2\omega_2^2 + 9\omega_4 c_s^2\omega_1^2\omega_2^2 + 2\omega_3\omega_4\omega_1^2 v_1^2)\frac{\rho v_1}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$ **at** $\frac{\partial^3\rho}{\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (-12 - \omega^2 + 12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (-12 + 12\omega_7 - \omega_7^2)\frac{c_s^4}{6\omega_7^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (-12 + 12\omega_3 - \omega_3^2)\frac{c_s^4}{6\omega_3^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (-c_s^4\omega_1^2\omega_2^2 - 14c_s^4\omega_2^2 + 2\omega_1 v_2^4\omega_2 + 4v_2^2\omega_2^2 - 15c_s^2\omega_1^2 v_2^2\omega_2 + 2c_s^2\omega_1^2\omega_2 + 2\omega_1^2 v_2^4 + 12c_s^2\omega_1^2 v_2^2 + 3\omega_1^2 v_2^2\omega_2 + 2c_s^4\omega_1^2 - 2c_s^4\omega_1^2\omega_2 + 3\omega_1 v_2^4\omega_2^2 - 2c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_2^2 - 18c_s^2 v_2^2\omega_2^2 + 15c_s^2\omega_1 v_2^2\omega_2^2 - 2\omega_1 v_2^2\omega_2 - 4v_2^4\omega_2^2 - 3\omega_1^2 v_2^4\omega_2 - 2c_s^2\omega_1^2 + 6c_s^2\omega_1 v_2^2\omega_2 - 3\omega_1 v_2^2\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 2\omega_1^2 v_2^2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = (-2\omega_{16} + \omega_{16}\omega_7 + 2\omega_7 - \omega_7^2)\frac{c_s^2\rho v_2}{\omega_{16}\omega_7^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = (-14v_2^2\omega_2^2 - 5\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 11\omega_1^2 v_2^2\omega_2 - 2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 10c_s^2\omega_2^2 + 6\omega_1 v_2^2\omega_2 + 8c_s^2\omega_1^2 + 2c_s^2\omega_1\omega_2 + 11\omega_1 v_2^2\omega_2^2 + 8\omega_1^2 v_2^2 + 6\omega_2^2)\frac{\rho v_2}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = \frac{-c_s^2\rho v_3}{6}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (-12\omega_{19}\omega_7 + 12\omega_{19}\omega_7\omega_{11} + 12\omega_7\omega_{11} - 12\omega_7^2\omega_{11} - \omega_{19}\omega_7^2\omega_{11} - 12\omega_{19}\omega_{11} + 12\omega_7^2)\frac{c_s^2\rho v_3}{6\omega_{19}\omega_7^2\omega_{11}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (-3\omega_6 c_s^2\omega_{11}\omega_{18} - 3c_s^2\omega_{11}^2 + \omega_6\omega_{11} + 3\omega_6 c_s^2\omega_{11}^2 + \omega_{11}^2 - 3\omega_6 c_s^2\omega_{11} + 3c_s^2\omega_{11}\omega_{18} - \omega_{11}^2 v_3^2 + \omega_6 v_3^2\omega_{18} - \omega_6\omega_{11}^2 + \omega_6\omega_{11}^2 v_3^2 - \omega_6\omega_{11}v_3^2 - \omega_6\omega_{11}v_3^2\omega_{18} - \omega_6\omega_{18} + \omega_6\omega_{11}\omega_{18} + 3\omega_6 c_s^2\omega_{18} - \omega_{11}\omega_{18} + \omega_{11}v_3^2\omega_{18})\frac{v_1 v_3}{\omega_6\omega_{11}^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (2\omega_1^2 v_1^2 + 3\omega_1 v_1^2\omega_2^2 - 4\omega_1\omega_2 v_3^2 - 3\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_2^2 v_3^2 + 2\omega_1 v_1^2\omega_2 + 2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_2^2 - 3\omega_1^2 v_1^2\omega_2 + 12c_s^2\omega_1^2 - 6c_s^2\omega_1\omega_2 - 4v_1^2\omega_2^2 + 2\omega_2^2 + 2\omega_1^2 v_3^2)\frac{v_1 v_3}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (12 + 36c_s^2\omega + 3\omega^2 + 12\omega v_3^2 - 11c_s^2\omega^2 - 12\omega - 3\omega^2 v_3^2 - 36c_s^2 - 12v_3^2)\frac{\rho v_3}{12\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (-24\omega_6 c_s^2\omega_{11}\omega_{18} + 6\omega_6^2\omega_{11}\omega_{18} + 36\omega_6^2 c_s^2\omega_{18} - 6\omega_6\omega_{11}^2\omega_{18} - 12\omega_6 c_s^2\omega_{11}^2 - 6\omega_6^2\omega_{11}v_3^2\omega_{18} - 12\omega_6^2\omega_{11}v_3^2 + 12\omega_6\omega_{11}^2 - 12\omega_6^2\omega_{18} + 6\omega_6\omega_{11}^2 v_3^2\omega_{18} - 12\omega_6\omega_{11}^2 v_3^2 - 11\omega_6^2 c_s^2\omega_{11}^2\omega_{18} - 12\omega_6^2 c_s^2\omega_{11} + 12\omega_6^2 v_3^2\omega_{18} - 18\omega_6^2 c_s^2\omega_{11}\omega_{18} - 24c_s^2\omega_{11}^2\omega_{18} + 12\omega_6^2\omega_{11}^2 v_3^2 - 12\omega_6^2\omega_{11}^2 + 12\omega_6^2\omega_{11} + 42\omega_6 c_s^2\omega_{11}^2\omega_{18} + 3\omega_6^2\omega_{11}^2\omega_{18} + 12\omega_6^2 c_s^2\omega_{11}^2 - 3\omega_6^2\omega_{11}^2 v_3^2\omega_{18})\frac{\rho v_3}{12\omega_6^2\omega_{11}^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} =$
$(-18\omega_6 c_s^2\omega_{11}\omega_{18} - 6\omega_{11}^2\omega_{18} - 36c_s^2\omega_{11}^2 + 3\omega_6\omega_{11}^2\omega_{18} + 12\omega_6\omega_{11} + 6\omega_{11}^2 v_3^2\omega_{18} + 36\omega_6 c_s^2\omega_{11}^2 + 12\omega_{11}^2 - 36\omega_6 c_s^2\omega_{11} - 12\omega_{11}^2 v_3^2 + 12\omega_6 v_3^2\omega_{18} - 12\omega_6\omega_{11}^2 - 3\omega_6\omega_{11}^2 v_3^2\omega_{18} + 12\omega_6\omega_{11}^2 v_3^2 - 12\omega_6\omega_{11}v_3^2 - 6\omega_6\omega_{11}v_3^2\omega_{18} + 18c_s^2\omega_{11}^2\omega_{18} - 12\omega_6\omega_{18} + 6\omega_6\omega_{11}\omega_{18} + 36\omega_6 c_s^2\omega_{18} - 11\omega_6 c_s^2\omega_{11}^2\omega_{18})\frac{\rho v_3}{12\omega_6\omega_{11}^2\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (-12\omega_6^2 v_3^2 - 12\omega_8\omega_2 - 3\omega_6^2\omega_8\omega_2 v_3^2 + 12\omega_6^2\omega_2 v_3^2 + 36\omega_6^2 c_s^2\omega_2 + 6\omega_6\omega_8\omega_2 - 36\omega_6^2 c_s^2 - 11\omega_6^2 c_s^2\omega_8\omega_2 + 12\omega_6^2 - 12\omega_6^2\omega_2 + 6\omega_6^2\omega_8 v_3^2 + 12\omega_6\omega_2 - 6\omega_6^2\omega_8 + 36c_s^2\omega_8\omega_2 - 6\omega_6\omega_8\omega_2 v_3^2 + 12\omega_8\omega_2 v_3^2 + 18\omega_6^2 c_s^2\omega_8 + 3\omega_6^2\omega_8\omega_2 - 12\omega_6\omega_2 v_3^2 - 18\omega_6 c_s^2\omega_8\omega_2 - 36\omega_6 c_s^2\omega_2)\frac{\rho v_3}{12\omega_6^2\omega_8\omega_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} =$
$(-36\omega_3 c_s^2\omega_1\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 2\omega_3\omega_4\omega_1\omega_2^2 v_3^2 + 4\omega_3\omega_4\omega_1^2 v_3^2 - 24\omega_4 c_s^2\omega_1\omega_2^2 - 24\omega_3\omega_4 v_1^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 - 2\omega_3\omega_4\omega_1^2\omega_2 v_3^2 + 4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 16\omega_3\omega_4 c_s^2\omega_1^2 + 8\omega_4\omega_1\omega_2^2 - 8\omega_4\omega_1\omega_2^2 v_3^2 - 18\omega_3\omega_4\omega_1^2 v_1^2\omega_2 + 16\omega_3\omega_4 c_s^2\omega_2^2 - 12\omega_3\omega_1\omega_2^2 v_3^2 + 12\omega_3\omega_4 c_s^2\omega_1\omega_2^2 - 4\omega_4\omega_1^2\omega_2 v_3^2 + 8\omega_3\omega_4\omega_1^2\omega_2 + 6\omega_4\omega_1^2\omega_2^2 v_3^2 - 12\omega_4 c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_4\omega_1\omega_2 + 6\omega_3\omega_1^2\omega_2^2 v_3^2 + 12\omega_3\omega_4\omega_1 v_1^2\omega_2 - 6\omega_4\omega_1^2\omega_2^2 - 11\omega_3\omega_4 c_s^2\omega_1^2\omega_2^2 - 12\omega_3\omega_4 c_s^2\omega_1^2\omega_2 - 3\omega_3\omega_4\omega_1^2\omega_2^2 v_3^2 + 12\omega_3\omega_1\omega_2^2 + 8\omega_3\omega_4\omega_2^2 v_3^2 + 4\omega_4\omega_1^2\omega_2 - 8\omega_3\omega_4\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 - 8\omega_3\omega_4\omega_1^2 + 18\omega_3\omega_4\omega_1 v_1^2\omega_2^2 + 18\omega_4 c_s^2\omega_1^2\omega_2^2 + 12\omega_3\omega_4\omega_1^2 v_1^2)\frac{\rho v_3}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = (-\omega_6 c_s^2\omega_{11}\omega_{18} - c_s^2\omega_{11}^2 + \omega_6\omega_{11} + \omega_6 c_s^2\omega_{11}^2 + \omega_{11}^2 - \omega_6 c_s^2\omega_{11} + c_s^2\omega_{11}\omega_{18} - 3\omega_{11}^2 v_3^2 + 3\omega_6 v_3^2\omega_{18} - \omega_6\omega_{11}^2 + 3\omega_6\omega_{11}^2 v_3^2 - 3\omega_6\omega_{11} v_3^2 - 3\omega_6\omega_{11} v_3^2\omega_{18} - \omega_6\omega_{18} + \omega_6\omega_{11}\omega_{18} + \omega_6 c_s^2\omega_{18} - \omega_{11}\omega_{18} + 3\omega_{11} v_3^2\omega_{18})\frac{\rho v_1}{\omega_6\omega_{11}^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = (3\omega_3 c_s^2\omega_1\omega_2^2 - 2\omega_3 v_1^2\omega_2^2 - \omega_3\omega_1^2 v_1^2\omega_2 + 2\omega_1 v_1^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - 2\omega_1\omega_2^2 + 6\omega_3\omega_1^2 v_3^2 - 6c_s^2\omega_1^2\omega_2 + \omega_3\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 - 4\omega_3 c_s^2\omega_2^2 + 2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + 6c_s^2\omega_1\omega_2^2 - 2\omega_1^2 v_1^2\omega_2 + \omega_3\omega_1 v_1^2\omega_2^2 - 12\omega_3\omega_1\omega_2 v_3^2 + 4\omega_3\omega_1\omega_2 - \omega_3\omega_1\omega_2^2 + 2\omega_3\omega_1^2 v_1^2 + 6\omega_3\omega_2^2 v_3^2 - 4\omega_3\omega_1^2)\frac{\rho v_1}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = (-\omega_7\omega_{11} v_3^2 - \omega_7\omega_{11}^2 - 3c_s^2\omega_{11}^2 - \omega_{19}\omega_7 + \omega_{19}\omega_7\omega_{11} + \omega_{11}^2 - \omega_{19}\omega_7\omega_{11} v_3^2 + 3\omega_{19} c_s^2\omega_{11} - \omega_{11}^2 v_3^2 + \omega_7\omega_{11} + \omega_{19}\omega_7 v_3^2 - 3\omega_{19}\omega_7 c_s^2\omega_{11} + \omega_{19}\omega_{11} v_3^2 + 3\omega_7 c_s^2\omega_{11}^2 - \omega_{19}\omega_{11} + 3\omega_{19}\omega_7 c_s^2 - 3\omega_7 c_s^2\omega_{11} + \omega_7\omega_{11}^2 v_3^2)\frac{v_2 v_3}{\omega_{19}\omega_7\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = (-4v_2^2\omega_2^2 - 4\omega_1\omega_2 v_3^2 - 3\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_2^2 v_3^2 - 3\omega_1^2 v_2^2\omega_2 + 2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 4\omega_1^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_2^2 + 2\omega_1 v_2^2\omega_2 + 12c_s^2\omega_1^2 - 6c_s^2\omega_1\omega_2 + 3\omega_1 v_2^2\omega_2^2 + 2\omega_1^2 v_2^2 + 2\omega_2^2 + 2\omega_1^2 v_3^2)\frac{v_2 v_3}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (12 + 36c_s^2\omega + 3\omega^2 + 12\omega v_3^2 - 11c_s^2\omega^2 - 12\omega - 3\omega^2 v_3^2 - 36c_s^2 - 12v_3^2)\frac{\rho v_3}{12\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (12\omega_7\omega_{11}^2 - 12\omega_7^2 c_s^2\omega_{11} + 12\omega_7^2\omega_{11}^2 v_3^2 + 36\omega_{19}\omega_7^2 c_s^2 - 11\omega_{19}\omega_7^2 c_s^2\omega_{11}^2 - 6\omega_{19}\omega_7\omega_{11}^2 - 24\omega_{19} c_s^2\omega_{11}^2 - 12\omega_{19}\omega_7^2 - 18\omega_{19}\omega_7^2 c_s^2\omega_{11} - 3\omega_{19}\omega_7^2\omega_{11}^2 v_3^2 + 12\omega_{19}\omega_7^2 v_3^2 + 12\omega_7^2 c_s^2\omega_{11}^2 + 12\omega_7^2\omega_{11} - 6\omega_{19}\omega_7^2\omega_{11} v_3^2 - 24\omega_{19}\omega_7 c_s^2\omega_{11} - 12\omega_7 c_s^2\omega_{11}^2 + 6\omega_{19}\omega_7\omega_{11}^2 v_3^2 + 6\omega_{19}\omega_7^2\omega_{11} - 12\omega_7^2\omega_{11} v_3^2 + 3\omega_{19}\omega_7^2\omega_{11}^2 + 42\omega_{19}\omega_7 c_s^2\omega_{11}^2 - 12\omega_7\omega_{11}^2 v_3^2 - 12\omega_7^2\omega_{11}^2)\frac{\rho v_3}{12\omega_{19}\omega_7^2\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} =$
$(-12\omega_7\omega_{11} v_3^2 - 12\omega_7\omega_{11}^2 - 36c_s^2\omega_{11}^2 - 12\omega_{19}\omega_7 + 3\omega_{19}\omega_7\omega_{11}^2 + 18\omega_{19} c_s^2\omega_{11}^2 + 6\omega_{19}\omega_7\omega_{11} + 12\omega_{11}^2 - 6\omega_{19}\omega_7\omega_{11} v_3^2 - 12\omega_{11}^2 v_3^2 + 12\omega_7\omega_{11} + 6\omega_{19}\omega_{11}^2 v_3^2 + 12\omega_{19}\omega_7 v_3^2 - 18\omega_{19}\omega_7 c_s^2\omega_{11} + 36\omega_7 c_s^2\omega_{11}^2 - 3\omega_{19}\omega_7\omega_{11}^2 v_3^2 + 36\omega_{19}\omega_7 c_s^2 - 36\omega_7 c_s^2\omega_{11} - 6\omega_{19}\omega_{11}^2 - 11\omega_{19}\omega_7 c_s^2\omega_{11}^2 + 12\omega_7\omega_{11}^2 v_3^2)\frac{\rho v_3}{12\omega_{19}\omega_7\omega_{11}^2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (-12\omega_6^2 v_3^2 + 6\omega_6^2\omega_{10} v_3^2 + 3\omega_6^2\omega_3\omega_{10} + 12\omega_3\omega_{10} v_3^2 - 18\omega_6\omega_3\omega_{10} c_s^2 + 12\omega_6\omega_3 + 36\omega_6^2\omega_3 c_s^2 - 36\omega_6^2 c_s^2 + 18\omega_6^2\omega_{10} c_s^2 + 36\omega_3\omega_{10} c_s^2 + 12\omega_6^2 - 6\omega_6^2\omega_{10} - 6\omega_6\omega_3\omega_{10} v_3^2 + 12\omega_6^2\omega_3 v_3^2 - 11\omega_6^2\omega_3\omega_{10} c_s^2 - 12\omega_6\omega_3 v_3^2 + 6\omega_6\omega_3\omega_{10} - 12\omega_6^2\omega_3 - 3\omega_6^2\omega_3\omega_{10} v_3^2 - 12\omega_3\omega_{10} - 36\omega_6\omega_3 c_s^2)\frac{\rho v_3}{12\omega_6^2\omega_3\omega_{10}}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} =$
$(-36\omega_3 c_s^2\omega_1\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 2\omega_3\omega_4\omega_1\omega_2^2 v_3^2 + 4\omega_3\omega_4\omega_1^2 v_3^2 + 12\omega_3\omega_4\omega_1^2 v_2^2 - 24\omega_4 c_s^2\omega_1\omega_2^2 + 18\omega_3\omega_4\omega_1 v_2^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 - 2\omega_3\omega_4\omega_1^2\omega_2 v_3^2 +$
$4\omega_3\omega_4 c_s^2\omega_1\omega_2 + 16\omega_3\omega_4 c_s^2\omega_1^2 + 8\omega_4\omega_1\omega_2^2 - 8\omega_4\omega_1\omega_2^2 v_3^2 + 12\omega_3\omega_4\omega_1 v_2^2\omega_2 + 16\omega_3\omega_4 c_s^2\omega_2^2 - 12\omega_3\omega_1\omega_2^2 v_3^2 + 12\omega_3\omega_4 c_s^2\omega_1\omega_2^2 - 4\omega_4\omega_1^2\omega_2 v_3^2 +$
$8\omega_3\omega_4\omega_1^2\omega_2 + 6\omega_4\omega_1^2\omega_2^2 v_3^2 - 12\omega_4 c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_4\omega_1\omega_2 + 6\omega_3\omega_1^2\omega_2^2 v_3^2 - 18\omega_3\omega_4\omega_1^2 v_2^2\omega_2 - 6\omega_4\omega_1^2\omega_2^2 - 11\omega_3\omega_4 c_s^2\omega_1^2\omega_2^2 - 12\omega_3\omega_4 c_s^2\omega_1^2\omega_2 -$
$3\omega_3\omega_4\omega_1^2\omega_2^2 v_3^2 + 12\omega_3\omega_1\omega_2^2 + 8\omega_3\omega_4\omega_2^2 v_3^2 + 4\omega_4\omega_1^2\omega_2 - 8\omega_3\omega_4\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 - 8\omega_3\omega_4\omega_1^2 - 24\omega_3\omega_4 v_2^2\omega_2^2 + 18\omega_4 c_s^2\omega_1^2\omega_2^2)\frac{\rho v_3}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2 \partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = (-3\omega_7\omega_{11} v_3^2 - \omega_7\omega_{11}^2 - c_s^2\omega_{11}^2 - \omega_{19}\omega_7 + \omega_{19}\omega_7\omega_{11} + \omega_{11}^2 - 3\omega_{19}\omega_7\omega_{11} v_3^2 + \omega_{19} c_s^2\omega_{11} - 3\omega_{11}^2 v_3^2 + \omega_7\omega_{11} + 3\omega_{19}\omega_7 v_3^2 -$
$\omega_{19}\omega_7 c_s^2\omega_{11} + 3\omega_{19}\omega_{11} v_3^2 + \omega_7 c_s^2\omega_{11}^2 - \omega_{19}\omega_{11} + \omega_{19}\omega_7 c_s^2 - \omega_7 c_s^2\omega_{11} + 3\omega_7\omega_{11}^2 v_3^2)\frac{\rho v_2}{\omega_{19}\omega_7\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = (3\omega_3 c_s^2\omega_1\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - 2\omega_1\omega_2^2 + 6\omega_3\omega_1^2 v_3^2 - 6c_s^2\omega_1^2\omega_2 + 2\omega_3\omega_1^2 v_2^2 + \omega_3\omega_1^2\omega_2 - 2\omega_1^2 v_2^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 - 4\omega_3 c_s^2\omega_2^2 + \omega_3\omega_1 v_2^2\omega_2^2 +$
$2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + 6c_s^2\omega_1\omega_2^2 - 12\omega_3\omega_1\omega_2 v_3^2 + 4\omega_3\omega_1\omega_2 - 2\omega_3 v_2^2\omega_2^2 - \omega_3\omega_1^2 v_2^2\omega_2 - \omega_3\omega_1\omega_2^2 + 2\omega_1 v_2^2\omega_2^2 + 6\omega_3\omega_2^2 v_3^2 - 4\omega_3\omega_1^2)\frac{\rho v_2}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^3 \rho}{\partial x_3^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z^3\rho} = (24c_s^2\omega^2 v_3^2 + 12c_s^2\omega + 36v_3^4 + 36\omega v_3^2 + 7\omega^2 v_3^4 - c_s^2\omega^2 + 12c_s^4 - 36\omega v_3^4 + 144c_s^2 v_3^2 - 7\omega^2 v_3^2 - 12c_s^4\omega - 12c_s^2 + c_s^4\omega^2 - 144c_s^2\omega v_3^2 - 36v_3^2)\frac{1}{12\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho} = (-144c_s^2\omega_{11} v_3^2 - c_s^2\omega_{11}^2 + 36v_3^4 - 7\omega_{11}^2 v_3^2 - 36\omega_{11} v_3^4 + 12c_s^2\omega_{11} + 12c_s^4 + 7\omega_{11}^2 v_3^4 + 144c_s^2 v_3^2 + 36\omega_{11} v_3^2 + c_s^4\omega_{11}^2 - 12c_s^2 -$
$12c_s^4\omega_{11} + 24c_s^2\omega_{11}^2 v_3^2 - 36v_3^2)\frac{1}{12\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z^3\rho} =$
$(-7\omega_6^2 v_3^2 + 36v_3^4 - 36\omega_6 v_3^4 - \omega_6^2 c_s^2 + 24\omega_6^2 c_s^2 v_3^2 + 12c_s^4 - 12\omega_6 c_s^4 - 144\omega_6 c_s^2 v_3^2 + \omega_6^2 c_s^4 + 12\omega_6 c_s^2 + 144c_s^2 v_3^2 - 12c_s^2 + 7\omega_6^2 v_3^4 + 36\omega_6 v_3^2 - 36v_3^2)\frac{1}{12\omega_6^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z^3\rho} = (-12\omega_1^2\omega_2 v_3^4 + c_s^4\omega_1^2\omega_2^2 + 8c_s^4\omega_2^2 - 16\omega_1\omega_2 v_3^2 + 4\omega_1^2 v_3^4 - 24\omega_1\omega_2^2 v_3^4 + 4c_s^2\omega_1^2\omega_2 - 7\omega_1^2\omega_2^2 v_3^2 - 16\omega_2^2 v_3^2 - c_s^2\omega_1^2\omega_2^2 +$
$24c_s^2\omega_1^2\omega_2^2 v_3^2 + 24c_s^2\omega_1^2 v_3^2 + 4c_s^4\omega_1^2 + 48c_s^2\omega_1\omega_2 v_3^2 - 4c_s^4\omega_1^2\omega_2 + 72c_s^2\omega_2^2 v_3^2 - 96c_s^2\omega_1\omega_2^2 v_3^2 - 48c_s^2\omega_1^2\omega_2 v_3^2 + 8c_s^2\omega_1\omega_2^2 - 8c_s^2\omega_2^2 - 4c_s^2\omega_1^2 +$
$16\omega_1\omega_2 v_3^4 + 12\omega_1^2\omega_2 v_3^2 - 8c_s^4\omega_1\omega_2^2 + 7\omega_1^2\omega_2^2 v_3^4 + 16\omega_2^2 v_3^4 - 4\omega_1^2 v_3^2 + 24\omega_1\omega_2^2 v_3^2)\frac{1}{12\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_z^3 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_3^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z^3 v_3} = (-24 - 36c_s^2\omega - 4\omega^2 - 60\omega v_3^2 + 5c_s^2\omega^2 + 24\omega + 11\omega^2 v_3^2 + 36c_s^2 + 60v_3^2)\frac{\rho v_3}{6\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_3} = (-24 + 5c_s^2\omega_{11}^2 - 4\omega_{11}^2 + 11\omega_{11}^2 v_3^2 - 36c_s^2\omega_{11} + 24\omega_{11} - 60\omega_{11} v_3^2 + 36c_s^2 + 60v_3^2)\frac{\rho v_3}{6\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z^3 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z^3 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_z v_3} = (-24 + 11\omega_6^2 v_3^2 + 24\omega_6 + 5\omega_6^2 c_s^2 - 4\omega_6^2 - 36\omega_6 c_s^2 + 36c_s^2 - 60\omega_6 v_3^2 + 60v_3^2)\frac{\rho v_3}{6\omega_6^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_z v_3} = (24\omega_1\omega_2 v_3^2 + 16\omega_1\omega_2^2 - 12c_s^2\omega_1^2\omega_2 + 11\omega_1^2\omega_2^2 v_3^2 + 28\omega_2^2 v_3^2 + 5c_s^2\omega_1^2\omega_2^2 - 8\omega_1\omega_2 + 8\omega_1^2\omega_2 - 4\omega_1^2 - 24c_s^2\omega_1\omega_2^2 + 20c_s^2\omega_2^2 + 8c_s^2\omega_1^2 - 20\omega_1^2\omega_2 v_3^2 + 8c_s^2\omega_1\omega_2 - 12\omega_2^2 + 8\omega_1^2 v_3^2 - 4\omega_1^2\omega_2^2 - 40\omega_1\omega_2^2 v_3^2)\frac{\rho v_3}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}^4_x \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1^4}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^4_x \rho} = (-6v_1^2 + c_s^2\omega - 12c_s^2\omega v_1^2 + 24c_s^2 v_1^2 + 2c_s^4 - 3\omega v_1^4 + 3\omega v_1^2 - c_s^4\omega - 2c_s^2 + 6v_1^4)\frac{v_3}{24\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho} = (216\omega_{13}^2 c_s^2 v_1^2\omega_9 + 36\omega_6^2\omega_{13}^2 v_1^4\omega_9 - 24\omega_{13}c_s^4\omega_9^2 + 72\omega_6^2\omega_{13}c_s^2 v_1^2\omega_9 - \omega_6^2\omega_{13}^2 c_s^4\omega_9^2 - 24\omega_{13}^2 c_s^2\omega_9 + 30\omega_6^2\omega_{13}v_1^2\omega_9^2 - 24\omega_6 v_1^4\omega_9^2 + 96\omega_6\omega_{13}v_1^4\omega_9^2 + 72\omega_6\omega_{13}^2 v_1^4 - 144\omega_6^2\omega_{13}^2 c_s^2 v_1^2 - 12\omega_6^2 c_s^2\omega_9^2 + 36\omega_6^2\omega_{13}^2 v_1^2 + 96\omega_6\omega_{13}^2 v_1^2\omega_9 - 144\omega_6\omega_{13}c_s^2 v_1^2\omega_9 - 144\omega_6 c_s^2 v_1^2\omega_9^2 + 48\omega_6\omega_{13}^2 c_s^2\omega_9 - 24\omega_6\omega_{13}^2 c_s^2 + 432\omega_6\omega_{13}c_s^2 v_1^2\omega_9^2 - 12\omega_6^2 v_1^2\omega_9^2 - 48\omega_6\omega_{13}v_1^4\omega_9 + 48\omega_6\omega_{13}c_s^4\omega_9^2 - 12\omega_6^2\omega_{13}^2 c_s^4 - 24\omega_6 c_s^4\omega_9^2 + 12\omega_6^2\omega_{13}c_s^2\omega_9^2 - 48\omega_{13}^2 v_1^2\omega_9 - 24\omega_6^2\omega_{13}v_1^2\omega_9 - 3\omega_6^2\omega_{13}^2 v_1^4\omega_9^2 - 48\omega_{13}v_1^4\omega_9^2 - 126\omega_6^2\omega_{13}c_s^2 v_1^2\omega_9^2 + 14\omega_6^2\omega_{13}^2 c_s^4\omega_9 + 24\omega_6 v_1^2\omega_9^2 - 96\omega_6\omega_{13}v_1^2\omega_9^2 + 12\omega_6^2\omega_{13}^2 c_s^2 + 12\omega_6^2 c_s^4\omega_9^2 + 150\omega_6^2\omega_{13}^2 c_s^2 v_1^2\omega_9 + 24\omega_6\omega_{13}^2 c_s^4 - 96\omega_6\omega_{13}^2 v_1^4\omega_9 - 432\omega_6\omega_{13}^2 c_s^2 v_1^2\omega_9 - 36\omega_6^2\omega_{13}^2 v_1^2\omega_9 + 24\omega_{13}c_s^2\omega_9^2 + \omega_6^2\omega_{13}^2 c_s^2\omega_9^2 + 288\omega_6\omega_{13}^2 c_s^2 v_1^2 + 24\omega_{13}^2 c_s^4\omega_9 - 30\omega_6^2\omega_{13}v_1^4\omega_9^2 - 12\omega_6^2\omega_{13}c_s^4\omega_9^2 + 48\omega_{13}^2 v_1^4\omega_9 + 24\omega_6^2\omega_{13}v_1^4\omega_9 + 3\omega_6^2\omega_{13}^2 v_1^2\omega_9^2 + 48\omega_{13}v_1^2\omega_9^2 + 72\omega_6^2 c_s^2 v_1^2\omega_9^2 - 14\omega_6^2\omega_{13}^2 c_s^2\omega_9 - 12\omega_6^2\omega_{13}^2 c_s^2 v_1^2\omega_9^2 - 36\omega_6^2\omega_{13}^2 v_1^4 - 48\omega_6\omega_{13}^2 c_s^4\omega_9 - 216\omega_{13}c_s^2 v_1^2\omega_9^2 + 12\omega_6^2 v_1^4\omega_9^2 + 48\omega_6\omega_{13}v_1^2\omega_9 - 72\omega_6\omega_{13}^2 v_1^2 - 48\omega_6\omega_{13}c_s^2\omega_9^2 + 24\omega_6 c_s^2\omega_9^2)\frac{v_3}{24\omega_6^2\omega_{13}^2\omega_9^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_x \rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x \rho} = (-6v_1^2 - c_s^4\omega_9 + 24c_s^2 v_1^2 - 12c_s^2 v_1^2\omega_9 + 2c_s^4 - 3v_1^4\omega_9 + c_s^2\omega_9 - 2c_s^2 + 6v_1^4 + 3v_1^2\omega_9)\frac{v_3}{24\omega_9}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^4_x \rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x \rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^4_x \rho} = (-6v_1^2 - 12\omega_4 c_s^2 v_1^2 + \omega_4 c_s^2 + 24c_s^2 v_1^2 + 2c_s^4 - 3\omega_4 v_1^4 + 3\omega_4 v_1^2 - 2c_s^2 - \omega_4 c_s^4 + 6v_1^4)\frac{v_3}{24\omega_4}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^4_x \rho} = (12v_1^4\omega_2 + 48c_s^2 v_1^2\omega_2 - 36c_s^2\omega_1 v_1^2\omega_2 + 2c_s^4\omega_1 + 6\omega_1 v_1^4 + 24c_s^2\omega_1 v_1^2 + 9\omega_1 v_1^2\omega_2 + 4c_s^4\omega_2 - 3c_s^4\omega_1\omega_2 - 12v_1^2\omega_2 - 2c_s^2\omega_1 - 9\omega_1 v_1^4\omega_2 - 4c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 6\omega_1 v_1^2)\frac{v_3}{72\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}^4_x v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^4}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 3c_s^2\omega + 2\omega - 5\omega v_1^2 + 6c_s^2)\frac{\rho v_1 v_3}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1} =$
$(24\omega_6^2\omega_{13}^2 + 72\omega_6\omega_{13}^2\omega_9 + 12\omega_6^2\omega_{13}c_s^2\omega_9 + 60\omega_{13}^2 c_s^2\omega_9 - 51\omega_6^2\omega_{13}v_1^2\omega_9^2 - 36\omega_{13}^2\omega_9 - 12\omega_6^2\omega_{13}\omega_9 + 24\omega_6^2 c_s^2\omega_9^2 - 60\omega_6^2\omega_{13}^2 v_1^2 - 168\omega_6\omega_{13}^2 v_1^2\omega_9 - 120\omega_6\omega_{13}^2 c_s^2\omega_9 + 72\omega_6\omega_{13}^2 c_s^2 + 24\omega_6^2 v_1^2\omega_9^2 + 21\omega_6^2\omega_{13}\omega_9^2 - 33\omega_6^2\omega_{13}c_s^2\omega_9^2 + 84\omega_{13}^2 v_1^2\omega_9 + 36\omega_6^2\omega_{13}v_1^2\omega_9 - 12\omega_6^2\omega_9^2 - 48\omega_6 v_1^2\omega_9^2 + 168\omega_6\omega_{13}v_1^2\omega_9^2 - 24\omega_6\omega_{13}c_s^2\omega_9 - 36\omega_6^2\omega_{13}^2 c_s^2 - 72\omega_6\omega_{13}\omega_9^2 + 24\omega_6\omega_9^2 + 61\omega_6^2\omega_{13}^2 v_1^2\omega_9 - 60\omega_{13}c_s^2\omega_9^2 - 3\omega_6^2\omega_{13}^2 c_s^2\omega_9^2 + 36\omega_{13}\omega_9^2 + 2\omega_6^2\omega_{13}^2\omega_9^2 - 25\omega_6^2\omega_{13}^2\omega_9 - 5\omega_6^2\omega_{13}^2 v_1^2\omega_9^2 - 84\omega_{13}v_1^2\omega_9^2 + 39\omega_6^2\omega_{13}^2 c_s^2\omega_9 - 48\omega_6\omega_{13}^2 + 24\omega_6\omega_{13}\omega_9 - 72\omega_6\omega_{13}v_1^2\omega_9 + 120\omega_6\omega_{13}^2 v_1^2 + 120\omega_6\omega_{13}c_s^2\omega_9^2 - 48\omega_6 c_s^2\omega_9^2)\frac{\rho v_1 v_3}{12\omega_6^2\omega_{13}^2\omega_9^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_x v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 3c_s^2\omega_9 + 6c_s^2 - 5v_1^2\omega_9 + 2\omega_9)\frac{\rho v_1 v_3}{12\omega_9}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^4_x v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 3\omega_4 c_s^2 + 2\omega_4 - 5\omega_4 v_1^2 + 6c_s^2)\frac{\rho v_1 v_3}{12\omega_4}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^4_x v_1} = (-15\omega_1 v_1^2\omega_2 + 6\omega_1\omega_2 - 4\omega_1 + 20v_1^2\omega_2 + 6c_s^2\omega_1 - 8\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 + 10\omega_1 v_1^2)\frac{\rho v_1 v_3}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}^4_x v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^4}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^4_x v_3} = (72v_1^2 - 3\omega^3 v_1^2 + 36c_s^2\omega + 216c_s^2\omega v_1^2 + c_s^2\omega^3 + 42\omega^2 v_1^2 - 144c_s^2 v_1^2 - 14c_s^2\omega^2 + 48c_s^4 + 108\omega v_1^4 - 42\omega^2 v_1^4 + 6c_s^2\omega^3 v_1^2 - 108\omega v_1^2 - 72c_s^4\omega - 24c_s^2 + 3\omega^3 v_1^4 + 30c_s^4\omega^2 - 72v_1^4 - 3c_s^4\omega^3 - 84c_s^2\omega^2 v_1^2)\frac{\rho}{24\omega^3}$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x v_3} = (72\omega_6^2\omega_{13}v_1^4 + 12\omega_6^3c_s^2v_1^2 + 6\omega_6^3\omega_{13}c_s^4 + 48\omega_6\omega_{13}v_1^2 + 24\omega_6\omega_{13}^2v_1^4 - 24\omega_6^2v_1^4 - 72\omega_6^2\omega_{13}^2c_s^2v_1^2 + 24\omega_6^2\omega_{13}^2v_1^2 + \omega_6^3\omega_{13}^2c_s^2 + 6\omega_6^3\omega_{13}^2c_s^2v_1^2 + 12\omega_6\omega_{13}^2c_s^2 + 3\omega_6^3\omega_{13}^2v_1^4 + 24\omega_6^2\omega_{13}^2c_s^4 + 18\omega_6^3\omega_{13}v_1^2 + 24\omega_6^2\omega_{13}c_s^2 + 24\omega_6\omega_{13}c_s^4 + 12\omega_6^3v_1^4 - 24\omega_6\omega_{13}c_s^2v_1^2 - 3\omega_6^3\omega_{13}^2v_1^2 - 8\omega_6^2\omega_{13}^2c_s^2 - 12\omega_6^3\omega_{13}c_s^2v_1^2 - 48\omega_6\omega_{13}^2c_s^4 - 12\omega_6^3v_1^2 - 24\omega_6\omega_{13}c_s^2 - 24\omega_6^2c_s^2v_1^2 - 18\omega_6^3\omega_{13}v_1^4 + 156\omega_6\omega_{13}^2c_s^2v_1^2 - 24\omega_6^2\omega_{13}c_s^4 + 24\omega_{13}^2c_s^4 - 48\omega_6\omega_{13}v_1^4 - 72\omega_6^2\omega_{13}v_1^2 - 6\omega_6^3\omega_{13}c_s^2 + 48\omega_6^2\omega_{13}c_s^2v_1^2 - 24\omega_6^2\omega_{13}^2v_1^4 - 96\omega_{13}^2c_s^2v_1^2 - 3\omega_6^3\omega_{13}^2c_s^4 - 24\omega_6\omega_{13}^2v_1^2 + 24\omega_6^2v_1^2)\frac{\rho}{24\omega_6^3\omega_{13}^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_x v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x v_3}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_3} = (72\omega_6^2\omega_{13}v_1^4 + 108\omega_6^3c_s^2v_1^2 + 6\omega_6^3\omega_{13}c_s^4 - 72\omega_6^2v_1^4 - 12\omega_6^2\omega_{13}^2c_s^2v_1^2 + 12\omega_6^2\omega_{13}^2v_1^2 + \omega_6^3\omega_{13}^2c_s^2 + 6\omega_6^3\omega_{13}^2c_s^2v_1^2 + 12\omega_6\omega_{13}^2c_s^2 + 3\omega_6^3\omega_{13}^2v_1^4 + 24\omega_6^2\omega_{13}^2c_s^4 + 30\omega_6^3\omega_{13}v_1^2 + 24\omega_6^2\omega_{13}c_s^2 + 24\omega_6\omega_{13}c_s^4 + 36\omega_6^3v_1^4 + 72\omega_6\omega_{13}c_s^2v_1^2 - 3\omega_6^3\omega_{13}^2v_1^2 - 8\omega_6^2\omega_{13}^2c_s^2 - 72\omega_6^3\omega_{13}c_s^2v_1^2 - 48\omega_6\omega_{13}^2c_s^4 - 36\omega_6^3v_1^2 - 24\omega_6\omega_{13}c_s^2 - 216\omega_6^2c_s^2v_1^2 - 30\omega_6^3\omega_{13}v_1^4 - 36\omega_6\omega_{13}^2c_s^2v_1^2 - 24\omega_6^2\omega_{13}c_s^4 + 24\omega_{13}^2c_s^4 - 72\omega_6^2\omega_{13}v_1^2 - 6\omega_6^3\omega_{13}c_s^2 + 144\omega_6^2\omega_{13}c_s^2v_1^2 - 12\omega_6^2\omega_{13}^2v_1^4 - 3\omega_6^3\omega_{13}^2c_s^4 + 72\omega_6^2v_1^2)\frac{\rho}{24\omega_6^3\omega_{13}^2}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^4_x v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_3}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^4_x v_3} = (12c_s^2\omega_2\omega_{12}^2 + 3v_1^4\omega_2^3\omega_{12}^2 + 144c_s^2v_1^2\omega_2^2\omega_{12} + 12v_1^2\omega_2^2\omega_{12}^2 + 72v_1^4\omega_2^2\omega_{12} + 6c_s^2v_1^2\omega_2^3\omega_{12}^2 + 30v_1^2\omega_2^3\omega_{12} + 24c_s^4\omega_2\omega_{12} - 72c_s^2v_1^2\omega_2^3\omega_{12} - 3v_1^2\omega_2^3\omega_{12}^2 - 48c_s^4\omega_2\omega_{12}^2 + 108c_s^2v_1^2\omega_2^3 - 12v_1^4\omega_2^2\omega_{12}^2 + 36v_1^4\omega_2^3 - 12c_s^2v_1^2\omega_2^2\omega_{12}^2 - 216c_s^2v_1^2\omega_2^2 - 72v_1^2\omega_2^2\omega_{12} + 24c_s^4\omega_{12}^2 - 24c_s^2\omega_2\omega_{12} - 30v_1^4\omega_2^3\omega_{12} - 72v_1^4\omega_2^2 + 6c_s^4\omega_2^3\omega_{12} - 36c_s^2v_1^2\omega_2\omega_{12}^2 + 24c_s^2\omega_2^2\omega_{12} + 24c_s^4\omega_2^2\omega_{12}^2 + c_s^2\omega_2^3\omega_{12}^2 - 6c_s^2\omega_2^3\omega_{12} - 24c_s^4\omega_2^2\omega_{12} + 72v_1^2\omega_2^2 - 8c_s^2\omega_2^2\omega_{12}^2 - 3c_s^4\omega_2^3\omega_{12}^2 - 36v_1^2\omega_2^3 + 72c_s^2v_1^2\omega_2\omega_{12})\frac{\rho}{24\omega_2^3\omega_{12}^2}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^4_x v_3} = (-12\omega_3^2\omega_4c_s^4\omega_1^2 - 36\omega_3^2\omega_4^2c_s^2\omega_1v_1^2 + 54\omega_3\omega_4c_s^2\omega_1^3v_1^2 + 9\omega_4^2\omega_1^3v_1^4 + 18\omega_3^2\omega_1^2v_1^2 + 12\omega_3^2\omega_4^2c_s^2\omega_1 - 36\omega_3^2\omega_4c_s^2\omega_1^3v_1^2 - 36\omega_3\omega_4\omega_1^2v_1^4 + 12\omega_3\omega_4^2c_s^4\omega_1 + 3\omega_3^2\omega_4^2\omega_1^3v_1^4 + 3\omega_3^2\omega_4c_s^4\omega_1^3 + 24\omega_3^2\omega_4^2c_s^4 + 36\omega_3\omega_4^2c_s^2\omega_1v_1^2 + 15\omega_3^2\omega_4\omega_1^3v_1^2 - 36\omega_3\omega_4^2\omega_1^2v_1^2 + \omega_3^2\omega_4^2c_s^2\omega_1^3 - 108\omega_3\omega_4c_s^2\omega_1^2v_1^2 - 9\omega_3^2\omega_1^3v_1^2 - 18\omega_4^2\omega_1^2v_1^4 - 12\omega_3\omega_4^2c_s^4\omega_1^2 + 15\omega_3\omega_4^2\omega_1^3v_1^2 - 36\omega_3^2\omega_4\omega_1^2v_1^2 - 8\omega_3^2\omega_4^2c_s^2\omega_1^2 + 12\omega_3^2\omega_4c_s^4\omega_1 - 12\omega_3^2\omega_4^2\omega_1^2v_1^4 + 72\omega_3^2\omega_4c_s^2\omega_1^2v_1^2 + 3\omega_3\omega_4^2c_s^4\omega_1^3 + 18\omega_3\omega_4\omega_1^3v_1^4 - 12\omega_3\omega_4^2c_s^2\omega_1 - 36\omega_3\omega_4^2c_s^2\omega_1^3v_1^2 - 3\omega_3^2\omega_4c_s^2\omega_1^3 - 54\omega_3^2c_s^2\omega_1^2v_1^2 - 54\omega_4^2c_s^2\omega_1^2v_1^2 + 18\omega_4^2\omega_1^2v_1^2 + 9\omega_3^2\omega_1^3v_1^4 + 36\omega_3^2\omega_4c_s^2\omega_1v_1^2 + 12\omega_3^2\omega_4^2\omega_1^2v_1^2 + 12\omega_3^2\omega_4c_s^2\omega_1^2 - 18\omega_3\omega_4\omega_1^3v_1^2 - 15\omega_3\omega_4^2\omega_1^3v_1^4 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 - 48\omega_3^2\omega_4^2c_s^4\omega_1 + 36\omega_3^2\omega_4\omega_1^2v_1^4 + 27\omega_4^2c_s^2\omega_1^3v_1^2 - 18\omega_3^2\omega_1^2v_1^4 - 9\omega_4^2\omega_1^3v_1^2 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_1^2 - 12\omega_3^2\omega_4c_s^2\omega_1 + 27\omega_3^2c_s^2\omega_1^3v_1^2 - 3\omega_3\omega_4^2c_s^2\omega_1^3 - 12\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2 - 3\omega_3^2\omega_4^2c_s^4\omega_1^3 - 15\omega_3^2\omega_4\omega_1^3v_1^4 + 36\omega_3\omega_4^2\omega_1^2v_1^4 + 12\omega_3\omega_4^2c_s^2\omega_1^2 + 36\omega_3\omega_4\omega_1^2v_1^2 - 3\omega_3^2\omega_4^2\omega_1^3v_1^2)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$$

coefficient $C^{(3)}_{\mathrm{D}^3_x\mathrm{D}_y\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^3\partial x_2}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = 0$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = (4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_9^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 24\omega_6\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}^2v_1^2\omega_5\omega_9^2\omega_{12} - 12\omega_6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_5\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} - 12\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_5\omega_9\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + 12\omega_6\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}v_1^2\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_{12} - 6\omega_6^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7\omega_8v_1^2\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 6\omega_6^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}^2c_s^2\omega_8\omega_5\omega_9^2\omega_{12} - 9\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_6\omega_{13}^2\omega_7v_1^2\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9 - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5\omega_9\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} - 4\omega_6\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12} - 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9^2 - 12\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12} + 8\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{13}^2\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9\omega_{12} + 9\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 + 2\omega_6^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12} + 4\omega_6\omega_{13}\omega_7\omega_8v_1^2\omega_5\omega_9^2\omega_{12} - 24\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 12\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9^2 + 2\omega_6^2\omega_{13}\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12} + 4\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_5\omega_9^2\omega_{12} - 8\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9\omega_{12} + 12\omega_6\omega_{13}\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 6\omega_6^2\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9 + 12\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_6\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9^2 - 4\omega_6\omega_{13}^2\omega_7\omega_{14}v_1^2\omega_5\omega_9\omega_{12} - 6\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_8v_1^2\omega_5\omega_9^2\omega_{12} + 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9^2 + 12\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_5\omega_9\omega_{12} + 6\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5\omega_9^2 + 6\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7c_s^2\omega_5\omega_9^2\omega_{12} - 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_9\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_9^2 - 12\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9 + 2\omega_6^2\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9^2 - 4\omega_6^2\omega_{13}^2\omega_{14}v_1^2\omega_5\omega_9\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_8v_1^2\omega_5\omega_9^2\omega_{12} - 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} + 12\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7\omega_8v_1^2\omega_5\omega_9^2\omega_{12} + 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_6\omega_{13}\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12} - 4\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_9^2\omega_{12} + 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6^2\omega_{13}^2c_s^2\omega_5\omega_9^2\omega_{12} - 2\omega_6^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8v_1^2\omega_9^2)\frac{v_1v_2v_3}{4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = 0$$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{v_1 v_2 v_3}{12\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3 \partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (12\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_9^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 8\omega_6\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6^2\omega_{13}^2 v_1^2\omega_5\omega_9^2\omega_{12} -$
$4\omega_6\omega_{13}c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_5\omega_9^2\omega_{12} - 2\omega_6^2\omega_{13}\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} -$
$4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} - 4\omega_6^2\omega_{13}^2 c_s^2\omega_{14}\omega_5\omega_9\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + 4\omega_6\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7\omega_{14} v_1^2\omega_5\omega_9\omega_{12} -$
$6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_{12} - 2\omega_6^2\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} +$
$2\omega_6^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6^2\omega_{13}^2 c_s^2\omega_8\omega_5\omega_9^2\omega_{12} - 3\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2 + 12\omega_6\omega_{13}^2\omega_7 v_1^2\omega_5\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9 -$
$12\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_5\omega_9\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} -$
$12\omega_6\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} - 9\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2 - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_6^2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_9^2 -$
$4\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9\omega_{12} + 8\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_6\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12} -$
$6\omega_6^2\omega_{13}^2\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12} + 3\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 + 2\omega_6^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} -$
$8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12} +$
$12\omega_6\omega_{13}\omega_7\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} - 8\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9^2 + 6\omega_6^2\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} + 12\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12} -$
$2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_5\omega_9^2\omega_{12} - 24\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12} +$
$4\omega_6\omega_{13}\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_6^2\omega_{13} c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9 + 4\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2 -$
$4\omega_6\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2 -$
$12\omega_6\omega_{13}^2\omega_7\omega_{14} v_1^2\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 12\omega_6\omega_{13}^2\omega_7\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} + 9\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12} +$
$12\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9^2 + 4\omega_6^2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_9\omega_{12} + 12\omega_6\omega_{13}^2\omega_{14}\omega_8 v_1^2\omega_5\omega_9\omega_{12} + 2\omega_6^2\omega_{13}^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2 +$
$2\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}^2\omega_7 c_s^2\omega_5\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} +$
$12\omega_6^2\omega_{13}^2\omega_{14}\omega_8 v_1^2\omega_9\omega_{12} - 12\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_9^2 - 4\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5\omega_9 + 6\omega_6^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2 -$
$12\omega_6^2\omega_{13}^2\omega_{14} v_1^2\omega_5\omega_9\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_5\omega_9\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} - 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} +$
$4\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_9\omega_{12} - 6\omega_6^2\omega_{13}\omega_7\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} + 24\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 12\omega_6\omega_{13}\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} +$
$4\omega_6^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12} - 12\omega_{13}\omega_7\omega_{14}\omega_8 v_1^2\omega_5\omega_9^2\omega_{12} + 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} +$
$4\omega_6^2\omega_{13}^2 c_s^2\omega_5\omega_9^2\omega_{12} - 2\omega_6^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}^2\omega_7 v_1^2\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}^2\omega_{14}\omega_8 v_1^2\omega_9^2)\frac{\rho v_2 v_3}{4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{\rho v_2 v_3}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^3 \partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (2 - 2v_1^2 + 3c_s^2\omega - \omega + \omega v_1^2 - 6c_s^2)\frac{\rho v_1 v_3}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} =$
$(12\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 24\omega_6^2\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} -$
$12\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 12\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12} - 12\omega_6\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 -$
$\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12} - 18\omega_6^2\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$3\omega_6^2\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6\omega_{13}^2\omega_7^2\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12} - 24\omega_6\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 42\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} -$
$12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9 - 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^2 - 12\omega_6\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_{12} +$
$12\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 + 6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2 - 36\omega_6\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} +$
$6\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 18\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 24\omega_6\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 6\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} +$
$12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} -$
$9\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2 - 6\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 24\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12} - 12\omega_6\omega_{13}^2\omega_7 c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + \omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12} -$
$12\omega_6^2\omega_{13}^2\omega_7^2 c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 v_1^2\omega_5\omega_9^2\omega_{12} - 42\omega_6^2\omega_{13}^2\omega_7 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 12\omega_6\omega_7^2\omega_{14}\omega_8^2 v_1^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$
$12\omega_6^2\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 6\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8 v_1^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 9\omega_6^2\omega_{13}^2\omega_7^2 c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$

$18\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 6\omega_6^2\omega_{13}\omega_7^2\omega_8^2v_1^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 36\omega_6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 24\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}^2\omega_7^2\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5\omega_9^2\omega_{12} - 36\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12} - 24\omega_6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 54\omega_6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 54\omega_6\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 12\omega_6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 18\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{12} + 12\omega_6\omega_{13}\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 18\omega_6^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 9\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2v_1^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5\omega_9^2 - 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9 + 30\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 54\omega_6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 3\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9^2 - 12\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7\omega_8^2v_1^2\omega_5^2\omega_9^2\omega_{12} + 18\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9^2\omega_{12} - 24\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2\omega_5\omega_9^2 - 6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_6^2\omega_{13}^2\omega_7\omega_8v_1^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6\omega_{13}\omega_7^2\omega_8^2v_1^2\omega_5^2\omega_9^2\omega_{12} - 54\omega_6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 9\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 36\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_6\omega_{13}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_9^2\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12} + 36\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_5^2\omega_9^2\omega_{12} - 3\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_9^2\omega_{12})\frac{\rho v_1v_3}{12\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-\omega_9\omega_{12} + v_1^2\omega_9\omega_{12} + 3c_s^2\omega_9\omega_{12} - 9c_s^2\omega_9 + 3c_s^2\omega_{12} + v_1^2\omega_{12} - 3v_1^2\omega_9 + 3\omega_9 - \omega_{12})\frac{\rho v_1v_3}{12\omega_9\omega_{12}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-9\omega_4c_s^2 - \omega_4\omega_9 + 3\omega_4 + \omega_4v_1^2\omega_9 + 3c_s^2\omega_9 - 3\omega_4v_1^2 + v_1^2\omega_9 - \omega_9 + 3\omega_4c_s^2\omega_9)\frac{\rho v_1v_3}{12\omega_4\omega_9}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (2\omega_3\omega_4\omega_1v_1^2 + 6\omega_3\omega_4c_s^2\omega_2 + 18\omega_3\omega_4c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4c_s^2\omega_1 + 4\omega_3\omega_4v_1^2\omega_2 - 27\omega_4c_s^2\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 18\omega_3\omega_4v_2^2\omega_2 + 6\omega_3\omega_4\omega_1v_1^2\omega_2 + 9\omega_3\omega_1\omega_2 - 9\omega_3\omega_1v_1^2\omega_2 - 9\omega_4\omega_1v_1^2\omega_2 + 2\omega_3\omega_4\omega_2 + 18\omega_3\omega_4\omega_1v_2^2)\frac{\rho v_1v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^3\partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = (-\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 + 4\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8 - 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2v_1^2 + \omega_6^3\omega_7^2\omega_{14}\omega_8^2v_1^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_8v_1^2 - 2\omega_6^2\omega_{13}^2c_s^2\omega_{14}\omega_8^2 - 6\omega_6\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8 + 2\omega_6^2\omega_{13}^2\omega_7^2\omega_8v_1^2 + \omega_6^3\omega_{13}^2\omega_7^2\omega_8^2v_1^2 - 2\omega_6^3\omega_{13}^2\omega_7^2c_s^2\omega_{14} - \omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2 + \omega_6^3\omega_{13}^2\omega_7^2c_s^2\omega_8^2 + 5\omega_6^3\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8 - 2\omega_6^2\omega_{13}\omega_7^2\omega_8^2 + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2v_1^2 + \omega_6^3\omega_{13}\omega_7^2\omega_8^2 + \omega_6^3\omega_7^2c_s^2\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2 - \omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2 - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2 - 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{13}^2\omega_7^2c_s^2\omega_8 + 2\omega_6^2\omega_{13}\omega_7^2\omega_8^2v_1^2 - \omega_6^3\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + 2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8v_1^2 + \omega_6^3\omega_{13}^2\omega_7\omega_8^2 + 2\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_8^2 - \omega_6^3\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2 + 7\omega_6^2\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_8 - \omega_6^3\omega_{13}^2\omega_7^2\omega_8^2 + 13\omega_6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2 + \omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{13}^2\omega_7^2\omega_8 + 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2 + 2\omega_6^3\omega_{13}^2\omega_7c_s^2\omega_8 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2 - \omega_6^3\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^2\omega_7^2c_s^2\omega_{14}\omega_8^2 - 11\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8 - \omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2 + 2\omega_6^3\omega_{13}^2c_s^2\omega_{14}\omega_8 + \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8 - \omega_6^3\omega_{13}\omega_7^2c_s^2\omega_8^2 - 7\omega_6^3\omega_{13}^2\omega_7c_s^2\omega_{14}\omega_8 - \omega_6^3\omega_{13}\omega_7^2\omega_8^2v_1^2 + \omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2v_1^2 + \omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 - 2\omega_6\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2 + \omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1^2 - 2\omega_6^3\omega_{13}^2\omega_7^2\omega_8v_1^2 + \omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 - 8\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2 - 2\omega_6^2\omega_7^2\omega_{14}\omega_8^2v_1^2 + 4\omega_6^2\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2 - \omega_6^3\omega_{13}^2\omega_7c_s^2\omega_8^2 + 2\omega_6^3\omega_{13}^2\omega_7c_s^2\omega_{14} - 5\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2 - \omega_6^3\omega_{13}^2\omega_7\omega_8^2v_1^2 + \omega_6^3\omega_{13}^2\omega_7^2\omega_{14}\omega_8v_1^2 - 2\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_8^2 + \omega_6^3\omega_{13}\omega_7c_s^2\omega_{14}\omega_8^2 + 2\omega_6^2\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2 - 2\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2v_1^2 + 2\omega_6^3\omega_{13}^2\omega_7^2\omega_8 + 6\omega_6\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8 + 2\omega_6^2\omega_{13}^2\omega_7^2c_s^2\omega_{14} - \omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2)\frac{\rho v_1v_2}{2\omega_6^3\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = (-18\omega_3^2\omega_4c_s^2 - 6\omega_3\omega_4\omega_1v_1^2 - 3\omega_3^2\omega_1v_2^2 + 18\omega_4^2c_s^2\omega_1 + 18\omega_3\omega_4^2c_s^2 - 2\omega_3\omega_4^2\omega_1v_2^2 + 6\omega_3^2\omega_4 - 6\omega_4^2v_1^2 - 18\omega_3\omega_4c_s^2\omega_1 - 2\omega_3^2\omega_4\omega_1 - 6\omega_3^2\omega_4v_2^2 + 6\omega_3^2v_2^2 + 2\omega_3^2\omega_4\omega_1v_2^2 + 2\omega_3\omega_4^2\omega_1 + 6\omega_3\omega_4^2v_2^2 + 12\omega_3\omega_4v_1^2 + 3\omega_4^2\omega_1v_1^2 - 6\omega_3^2v_1^2 - 6\omega_3\omega_4^2c_s^2\omega_1 + 6\omega_3\omega_4\omega_1 + 3\omega_4^2\omega_1v_2^2 - 6\omega_4^2\omega_1 - 6\omega_4^2v_2^2 - 12\omega_3\omega_4 + 12\omega_4^2 + 36\omega_3\omega_4c_s^2 + 6\omega_3^2\omega_4c_s^2\omega_1 - 6\omega_3\omega_4^2 + 3\omega_3^2\omega_1v_1^2 - 36\omega_4^2c_s^2)\frac{\rho v_1v_2}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-2+\omega)\frac{c_s^4v_3}{6\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (24\omega_6\omega_7^2\omega_8^2\omega_5 + 12\omega_6^2\omega_7^2\omega_8\omega_5^2 - 12\omega_6^2\omega_7^2\omega_5^2 - 12\omega_7^2\omega_8^2\omega_5 + 24\omega_6^2\omega_7\omega_8^2\omega_5 + 12\omega_6^2\omega_8\omega_5^2 + 12\omega_6^2\omega_7^2\omega_8^2 + 12\omega_6\omega_7^2\omega_5^2 - 12\omega_6^2\omega_7\omega_8^2 - 12\omega_6\omega_7^2\omega_8^2 - 24\omega_6\omega_7^2\omega_8\omega_5^2 - 14\omega_6^2\omega_7^2\omega_8^2\omega_5 + 12\omega_6^2\omega_7\omega_5^2 + \omega_6^2\omega_7^2\omega_8^2\omega_5^2 - 24\omega_6^2\omega_7\omega_8\omega_5^2 + 12\omega_7^2\omega_8\omega_5^2 - 12\omega_6^2\omega_8^2\omega_5)\frac{c_s^4 v_3}{6\omega_6^2\omega_7^2\omega_8^2\omega_5^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-2+\omega_5)\frac{c_s^4 v_3}{6\omega_5}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-2+\omega_1)\frac{c_s^4 v_3}{6\omega_1}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (3\omega_1 v_2^2 - 3v_2^2\omega_2 - 2\omega_1 - 3v_1^2\omega_2 + 2c_s^2\omega_1 + 2\omega_2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2 + 3\omega_1 v_1^2)\frac{c_s^2 v_3}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} - 4\omega_6\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 - 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_9\omega_{12} + 4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 4\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12} - 6\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9 - 4\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9\omega_{12} + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6^2\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9\omega_{12} + 6\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 4\omega_6\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} - 2\omega_6^2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 - 4\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 3\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 3\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2)\frac{c_s^2\rho v_1 v_3}{2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1 v_1^2)\frac{\rho v_1 v_3}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_8\omega_5^2\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5 + 2\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15} - 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 + 4\omega_6^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_6^2\omega_{16}\omega_7\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_6^2\omega_{10}\omega_7\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_5^2\omega_{15} - 4\omega_6^2\omega_{16}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 - 4\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_{15} + 2\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_8\omega_5^2\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15} - 3\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6^2\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15} + 3\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2)\frac{c_s^2\rho v_2 v_3}{2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (\omega_1 v_2^2 - v_2^2\omega_2 - \omega_1 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2)\frac{\rho v_2 v_3}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2 \partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = (-2 - \omega^2 + 3\omega)\frac{c_s^4\rho}{\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = (\omega_6^3\omega_{13}\omega_7^3 c_s^2\omega_{14}\omega_8^2 - 4\omega_6^3\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 v_1^2 - \omega_6^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 v_2^2 + \omega_6^3\omega_{16}\omega_7^3\omega_{17}\omega_8^2 v_1^2 - \omega_6\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2 -$
$6\omega_6^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 v_1^2 - 2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 v_1^2 - 2\omega_6^2\omega_{16}\omega_7^3 c_s^2\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8^2 v_2^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_2^2 +$
$2\omega_6^2\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14} v_1^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 v_1^2 - \omega_6^3\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8^2 v_1^2 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 v_2^2 +$
$4\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_1^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 v_2^2 - 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14} v_1^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14} v_1^2 -$
$\omega_6^3\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8^2 v_2^2 - 2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_2^2 - 6\omega_6^2\omega_{16}\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2 + \omega_6^3\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8^2 v_1^2 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8^2 v_1^2 -$
$\omega_6^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 v_2^2 - 2\omega_6^3\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2 + 2\omega_6\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 v_2^2 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2 - \omega_6^3\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_1^2 +$
$\omega_6^2\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8^2 + \omega_6^2\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2 + 4\omega_6\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 v_1^2 + \omega_6^3\omega_{16}\omega_7^3 c_s^2\omega_{17}\omega_8^2 +$
$3\omega_6\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 v_2^2 + \omega_6^3\omega_{16}\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{14}\omega_8 - 2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 v_2^2 + 2\omega_6^2\omega_{16}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2 -$
$2\omega_6^3\omega_{16}\omega_{13}\omega_{17}\omega_{14}\omega_8^2 v_1^2 - \omega_6^3\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{17}\omega_8^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8 v_2^2 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14} v_2^2 - \omega_6^3\omega_{16}\omega_{13}\omega_7 c_s^2\omega_{17}\omega_{14}\omega_8^2 +$
$2\omega_6^3\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14} v_2^2 + \omega_6^3\omega_{13}\omega_7^3\omega_{14}\omega_8^2 v_2^2 - 4\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_1^2 - 2\omega_6^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 v_1^2 + 2\omega_6^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_2^2 -$
$2\omega_6^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8 v_1^2 - 2\omega_6^2\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{17}\omega_8 - 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_8 - 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8 v_1^2 - 2\omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8^2 v_2^2 -$
$2\omega_6^3\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14} v_2^2 - 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8 v_2^2 + \omega_6^3\omega_{16}\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8 v_2^2 +$
$2\omega_6^3\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8 v_1^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{17}\omega_8 + 3\omega_6^3\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 v_1^2 + 4\omega_6^3\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 v_2^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 v_1^2 +$
$2\omega_6\omega_{16}\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 v_1^2 + 4\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_2^2 - 4\omega_6^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 v_2^2 +$
$2\omega_6^2\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8 - 6\omega_6^3\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 v_2^2 - \omega_6^3\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_1^2 + 2\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 v_1^2 -$
$\omega_6^3\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{14}\omega_8^2 - 4\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 v_2^2 - \omega_6^3\omega_{16}\omega_7^2 c_s^2\omega_{17}\omega_{14}\omega_8^2 - \omega_6^2\omega_{13}\omega_7^3 c_s^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2 c_s^2\omega_{14}\omega_8 -$
$2\omega_6^2\omega_{16}\omega_{13}\omega_7^3 c_s^2\omega_{14}\omega_8)\frac{c_s^2\rho}{2\omega_6^3\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} =$
$(\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8 - \omega_6^2\omega_{16}\omega_7\omega_{17}\omega_{14}\omega_8 - 2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{14} - 6\omega_6\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 - \omega_6\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 + \omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8 - 2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17} -$
$2\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8 + \omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_8 - \omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14} + 2\omega_6\omega_{16}\omega_7\omega_{17}\omega_{14}\omega_8 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{14}\omega_8 -$
$2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14} + 2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8 - \omega_6^2\omega_{16}\omega_{13}\omega_{17}\omega_{14}\omega_8 + 2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 + \omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 + 2\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 -$
$\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17} + \omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8 - 2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{14} + \omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 - 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8 +$
$2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{14} + 2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14} + 2\omega_6\omega_{16}\omega_{13}\omega_{17}\omega_{14}\omega_8 - \omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8 - 2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17})\frac{c_s^4\rho}{2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = (2\omega_3^2\omega_2 - \omega_3^2 - \omega_3\omega_{13}\omega_2 - \omega_3^2\omega_2^2 + 2\omega_3\omega_2^2 + \omega_{13}\omega_2 - 2\omega_3\omega_2 + \omega_3\omega_{13} - \omega_2^2)\frac{c_s^4\rho}{\omega_3^2\omega_{13}\omega_2^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = (-6\omega_3^2\omega_1^2\omega_5 v_2^2 - 8\omega_3^2\omega_4 c_s^2\omega_1^2\omega_5 + 6\omega_3^2\omega_4 c_s^2\omega_1^3 v_1^2\omega_5 + 8\omega_3\omega_4^2 c_s^4\omega_1\omega_5 - 12\omega_3^2\omega_4 c_s^2\omega_1\omega_5 v_2^2 + 6\omega_4^2\omega_1^2\omega_5 v_2^2 - 18\omega_4^2 c_s^2\omega_1^2\omega_5 v_2^2 -$
$2\omega_3^2\omega_4 c_s^4\omega_1^3\omega_5 - 3\omega_3\omega_4^2\omega_1^3 v_1^4\omega_5 - 6\omega_3^2\omega_4\omega_1^2\omega_5 v_2^4 + 16\omega_3^2\omega_4^2 c_s^4\omega_5 + 12\omega_3\omega_4^2 c_s^2\omega_1 v_1^2\omega_5 - 3\omega_3^2\omega_4\omega_1^3 v_1^2\omega_5 + 18\omega_3^2 c_s^2\omega_1^2\omega_5 v_2^2 - 6\omega_3\omega_4^2\omega_1^2 v_1^2\omega_5 -$
$6\omega_3^2\omega_4\omega_1^2 v_1^4\omega_5 - 3\omega_3\omega_4^2\omega_1^3\omega_5 v_2^4 - 8\omega_3^2\omega_4^2 c_s^4\omega_1\omega_5 - 6\omega_3\omega_4^2 c_s^2\omega_1^3\omega_5 v_2^2 - 3\omega_3^2\omega_4\omega_1^3\omega_5 v_2^2 + 8\omega_3^2\omega_4 c_s^4\omega_1^2\omega_5 + 12\omega_3\omega_4^2 c_s^2\omega_1\omega_5 v_2^2 - 8\omega_3\omega_4^2 c_s^2\omega_1\omega_5 -$
$6\omega_3\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_5 + 2\omega_3^2\omega_4 c_s^2\omega_1^3\omega_5 + 18\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_5 - 6\omega_3\omega_4^2\omega_1^2\omega_5 v_2^2 - 3\omega_3^2\omega_1^3\omega_5 v_2^4 + 6\omega_3^2\omega_4 c_s^2\omega_1^3\omega_5 v_2^2 - 6\omega_3^2\omega_1^2 v_1^2\omega_5 + 3\omega_4^2\omega_1^3 v_1^4\omega_5 -$
$18\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_5 + 3\omega_4^2\omega_1^3\omega_5 v_2^4 - 3\omega_3^2\omega_1^3 v_1^4\omega_5 + 6\omega_4^2\omega_1^2 v_1^2\omega_5 - 12\omega_3^2\omega_4 c_s^2\omega_1 v_1^2\omega_5 - 9\omega_3^2 c_s^2\omega_1^3\omega_5 v_2^2 + 3\omega_3\omega_4^2\omega_1^3 v_1^2\omega_5 + 6\omega_3\omega_4^2 c_s^2\omega_1^2\omega_5 v_2^2 +$
$6\omega_3\omega_4^2\omega_1^2\omega_5 v_2^4 + 3\omega_3^2\omega_4\omega_1^3 v_1^4\omega_5 + 3\omega_3^2\omega_4\omega_1^3\omega_5 v_2^4 + 6\omega_3\omega_4^2\omega_1^2 v_1^4\omega_5 + 6\omega_3^2\omega_4\omega_1^2 v_1^2\omega_5 - 3\omega_4^2\omega_1^3\omega_5 v_2^2 - 8\omega_3^2\omega_4 c_s^4\omega_1\omega_5 + 8\omega_3\omega_4^2 c_s^2\omega_1^2\omega_5 +$
$9\omega_4^2 c_s^2\omega_1^3\omega_5 v_2^2 - 6\omega_3^2\omega_4 c_s^2\omega_1^2 v_1^2\omega_5 + 2\omega_3\omega_4^2 c_s^4\omega_1^3\omega_5 + 3\omega_3^2\omega_1^3\omega_5 v_2^2 - 32\omega_3^2\omega_4^2 c_s^4\omega_1 - 6\omega_4^2\omega_1^2\omega_5 v_2^4 + 9\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_5 - 3\omega_4^2\omega_1^3 v_1^2\omega_5 + 6\omega_3^2\omega_1^2 v_1^4\omega_5 +$
$32\omega_3^2\omega_4^2 c_s^4\omega_1^2 + 6\omega_3^2\omega_1^2\omega_5 v_2^4 - 6\omega_4^2\omega_1^2 v_1^4\omega_5 + 3\omega_3^2\omega_1^3 v_1^2\omega_5 - 6\omega_3^2\omega_4 c_s^2\omega_1^2\omega_5 v_2^2 - 8\omega_3^2\omega_4^2 c_s^4\omega_1^3 + 6\omega_3\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_5 + 8\omega_3^2\omega_4 c_s^2\omega_1\omega_5 -$
$9\omega_3^2 c_s^2\omega_1^3 v_1^2\omega_5 + 3\omega_3\omega_4^2\omega_1^3\omega_5 v_2^2 - 8\omega_3\omega_4^2 c_s^4\omega_1^2\omega_5 - 2\omega_3\omega_4^2 c_s^2\omega_1^3\omega_5 + 6\omega_3^2\omega_4\omega_1^2\omega_5 v_2^2)\frac{\rho}{8\omega_3^2\omega_4^2\omega_1^3\omega_5}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (-4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5 -$
$4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} -$
$12\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 8\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} +$
$12\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2 + 6\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 + 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} -$
$3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2 - 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8v_2^2\omega_{15} + 3\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5v_2^2\omega_{15} +$
$4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8v_2^2\omega_{15} + 8\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 9\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5v_2^2\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_5v_2^2\omega_{15} +$
$6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 + 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5v_2^2 + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} +$
$12\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5 + 2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 -$
$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8v_2^2 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5v_2^2\omega_{15} +$
$8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8v_2^2\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} - 3\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8 - 12\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} +$
$9\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5v_2^2\omega_{15} + 12\omega_6\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} +$
$4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5v_2^2\omega_{15} + 24\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 12\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$6\omega_6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 6\omega_6\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15} -$
$6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 + 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15} - 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15} -$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5v_2^2\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5v_2^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$12\omega_6\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15} - 4\omega_6\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8v_2^2 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5v_2^2\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15} +$
$2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 24\omega_6\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_5\omega_{15} -$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8v_2^2 - 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15})\frac{v_1v_2v_3}{4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1v_1^2)\frac{v_1v_2v_3}{12\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = (2 + 3c_s^2\omega + \omega v_2^2 - \omega - 6c_s^2 - 2v_2^2)\frac{\rho v_2v_3}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = (-12\omega_6^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2 +$
$18\omega_6^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 18\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - 6\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5^2v_2^2\omega_{15} -$
$24\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5 - 24\omega_6^2\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2 + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 36\omega_6^2\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5 - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2v_2^2\omega_{15} + 4\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 6\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5v_2^2\omega_{15} +$
$6\omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8^2\omega_5^2v_2^2\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15} +$
$6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 24\omega_6^2\omega_{16}^2\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$24\omega_6^2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - 9\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} -$
$12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2 - 18\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 3\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$18\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_8^2\omega_5^2v_2^2\omega_{15} - 36\omega_6^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2v_2^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5v_2^2 -$
$6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 36\omega_6^2\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 3\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2v_2^2\omega_{15} +$
$24\omega_6^2\omega_{16}^2\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 18\omega_6^2\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 9\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2 -$
$12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15} - 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5^2\omega_{15} +$
$42\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8^2\omega_5^2v_2^2\omega_{15} + 30\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$24\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_{15} - 6\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - \omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2v_2^2\omega_{15} + 6\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} -$
$24\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8^2\omega_5^2v_2^2\omega_{15} + 54\omega_6^2\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$9\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2 - 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5 - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} -$

$42\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 36\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 36\omega_6^2\omega_{16}^2\omega_{10}c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} -$
$9\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_5^2\omega_{15} - 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2v_2^2 +$
$54\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 6\omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2 + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} -$
$12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5v_2^2 + 18\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 54\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 54\omega_6^2\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$12\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} + \omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15})\frac{\rho v_2v_3}{12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = (v_2^2\omega_{15} + \omega_{10}v_2^2\omega_{15} + 3\omega_{10} + 3c_s^2\omega_{15} + 3\omega_{10}c_s^2\omega_{15} - 9\omega_{10}c_s^2 - \omega_{10}\omega_{15} - 3\omega_{10}v_2^2 - \omega_{15})\frac{\rho v_2v_3}{12\omega_{10}\omega_{15}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = (-\omega_7\omega_5 - 9c_s^2\omega_5 - 3\omega_5v_2^2 - \omega_7 + \omega_7\omega_5v_2^2 + 3\omega_7c_s^2\omega_5 + \omega_7v_2^2 + 3\omega_5 + 3\omega_7c_s^2)\frac{\rho v_2v_3}{12\omega_7\omega_5}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_1} = (-9\omega_3\omega_1v_2^2\omega_2 + 18\omega_3\omega_4\omega_1v_1^2 - 9\omega_4\omega_1v_2^2\omega_2 + 6\omega_3\omega_4c_s^2\omega_2 + 18\omega_3\omega_4c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4c_s^2\omega_1 + 6\omega_3\omega_4\omega_1v_2^2\omega_2 -$
$18\omega_3\omega_4v_1^2\omega_2 - 27\omega_4c_s^2\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 4\omega_3\omega_4v_2^2\omega_2 + 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 2\omega_3\omega_4\omega_1v_2^2)\frac{\rho v_2v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = (-12\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5 -$
$12\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8 + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} -$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 6\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 24\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} +$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} + 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2 + 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 + 12\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} -$
$9\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2 - 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8v_2^2\omega_{15} + 9\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5v_2^2\omega_{15} +$
$12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8v_2^2\omega_{15} + 8\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 - 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5v_2^2\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_5v_2^2\omega_{15} +$
$2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5 + 6\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5v_2^2 + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} +$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5 + 6\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 12\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 -$
$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5v_2^2 + 4\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8v_2^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5v_2^2\omega_{15} +$
$24\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8v_2^2\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5v_2^2\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} - 3\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8 - 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} +$
$3\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 12\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5v_2^2\omega_{15} + 4\omega_6\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5v_2^2\omega_{15} +$
$4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} - 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5v_2^2\omega_{15} + 8\omega_6\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 4\omega_{16}\omega_{10}^2\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 2\omega_6\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15} -$
$2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{17}\omega_5\omega_{15} -$
$12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5v_2^2\omega_{15} - 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5v_2^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$4\omega_6\omega_{10}^2\omega_7^2c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15} - 4\omega_6\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8v_2^2 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5v_2^2\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_5\omega_{15} +$
$2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 8\omega_6\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{17}\omega_5\omega_{15} -$
$12\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8v_2^2 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7c_s^2\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15})\frac{\rho v_1v_3}{4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_2} = (-\omega_1 - v_1^2\omega_2 + 3c_s^2\omega_1 + \omega_2 - 3c_s^2\omega_2 + \omega_1v_1^2)\frac{\rho v_1v_3}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_3} = (-2\omega_6^2\omega_{16}^2\omega_7^3c_s^2\omega_{17} - 7\omega_6\omega_{16}^2\omega_7^3c_s^2\omega_{17}\omega_8 + 2\omega_6^2\omega_{16}\omega_7^2c_s^2\omega_8^2 - \omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2v_2^2 - \omega_6^2\omega_7^3\omega_{17}\omega_8^2 - 11\omega_6^2\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8 - \omega_6^2\omega_{16}^2\omega_7^3\omega_8^2 + 2\omega_6\omega_{16}^2\omega_7^3\omega_8v_2^2 - \omega_6\omega_{16}^2\omega_7^3c_s^2\omega_8^2 + 7\omega_6\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8^2 + \omega_6\omega_{16}^2\omega_7^3\omega_{17}\omega_8 - 2\omega_6^2\omega_{16}^2\omega_7^3\omega_8v_2^2 - 2\omega_6^2\omega_{16}^2\omega_7^2\omega_8 - \omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{17}\omega_8^2 - \omega_6^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2\omega_7^3c_s^2\omega_8^2 - 8\omega_6^2\omega_{16}^2c_s^2\omega_{17}\omega_8^2 - 2\omega_6\omega_{16}\omega_7^2c_s^2\omega_{17}\omega_8^2 - \omega_6^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 + \omega_6\omega_{16}\omega_7^3\omega_{17}\omega_8^2v_2^2 + 2\omega_6\omega_{16}^2\omega_7^3c_s^2\omega_{17} + 4\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2v_2^2 + 2\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8^2 + 2\omega_{16}^2\omega_7^3c_s^2\omega_{17}\omega_8 + \omega_6\omega_{16}\omega_7^3c_s^2\omega_{17}\omega_8^2 + 4\omega_6^2\omega_{16}\omega_7^2c_s^2\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}^2\omega_7^2\omega_8^2 - \omega_6^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2v_2^2 - 2\omega_6^2\omega_{16}^2\omega_7^3c_s^2\omega_8 - \omega_6^2\omega_{16}\omega_7^3\omega_8^2v_2^2 - 2\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8^2 - 2\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8^2v_2^2 + 5\omega_6^2\omega_{16}^2\omega_7^3c_s^2\omega_{17}\omega_8 + 2\omega_6\omega_{16}^2\omega_7^3c_s^2\omega_8 + \omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2v_2^2 + 4\omega_6\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8 - 2\omega_6^2\omega_{16}^2\omega_7^2\omega_8^2v_2^2 - 4\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2 - 5\omega_6^2\omega_{16}^2\omega_7^2c_s^2\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_8 + \omega_6^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8v_2^2 - 6\omega_6\omega_{16}^2\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2v_2^2 + 6\omega_6^2\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8 + 2\omega_6^2\omega_{16}^2\omega_7^2\omega_8v_2^2 + \omega_6\omega_{16}^2\omega_7^3\omega_8^2 + \omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8 - 2\omega_6^2\omega_{16}\omega_7^2\omega_8^2 - 2\omega_6^2\omega_{16}^2\omega_7^2c_s^2\omega_8^2 - 2\omega_6^2\omega_{16}\omega_7\omega_{17}\omega_8^2v_2^2 - 2\omega_6^2\omega_7^2\omega_{17}\omega_8^2v_2^2 - \omega_6^2\omega_{16}\omega_7^3c_s^2\omega_8^2 + 2\omega_6^2\omega_{16}^2\omega_7^2c_s^2\omega_{17} + 2\omega_6^2\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}\omega_7\omega_{17}\omega_8^2 + \omega_6^2\omega_7^3c_s^2\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}\omega_7^3\omega_8^2 + \omega_6^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2\omega_7^3\omega_8^2v_2^2 + \omega_6^2\omega_7^3\omega_{17}\omega_8^2v_2^2 - 2\omega_6^2\omega_7^2c_s^2\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{16}\omega_7c_s^2\omega_{17}\omega_8^2 - \omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 + 13\omega_6^2\omega_{16}^2\omega_7c_s^2\omega_{17}\omega_8^2 - \omega_6\omega_{16}^2\omega_7^3\omega_{17}\omega_8v_2^2 - 2\omega_6\omega_{16}^2\omega_7^3\omega_8 + 2\omega_6^2\omega_{16}\omega_7^2\omega_8^2v_2^2 + \omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}^2\omega_7^2c_s^2\omega_8 - \omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8v_2^2 - \omega_6\omega_{16}^2\omega_7^3\omega_8^2v_2^2 - \omega_6\omega_{16}\omega_7^3\omega_{17}\omega_8^2)\frac{\rho v_1^3v_2}{2\omega_6^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_3} = (-18\omega_3^2\omega_4c_s^2 + 3\omega_3^2\omega_1v_2^2 + 18\omega_4^2c_s^2\omega_1 + 18\omega_3\omega_4^2c_s^2 + 6\omega_3^2\omega_4 - 6\omega_4^2v_1^2 - 18\omega_3\omega_4c_s^2\omega_1 - 2\omega_3^2\omega_4\omega_1 - 6\omega_3^2v_2^2 + 2\omega_3\omega_4^2\omega_1 + 3\omega_4^2\omega_1v_1^2 + 6\omega_3^2v_1^2 - 6\omega_3\omega_4^2c_s^2\omega_1 + 2\omega_3^2\omega_4\omega_1v_1^2 + 6\omega_3\omega_4^2v_1^2 + 12\omega_3\omega_4v_2^2 + 6\omega_3\omega_4\omega_1 + 3\omega_4^2\omega_1v_2^2 - 6\omega_4^2\omega_1 - 6\omega_4^2v_2^2 - 12\omega_3\omega_4 + 12\omega_4^2 - 6\omega_3^2\omega_4v_1^2 + 36\omega_3\omega_4c_s^2 + 6\omega_3^2\omega_4c_s^2\omega_1 - 6\omega_3\omega_4^2 - 2\omega_3\omega_4^2\omega_1v_1^2 - 3\omega_3^2\omega_1v_1^2 - 6\omega_3\omega_4\omega_1v_2^2 - 36\omega_4^2c_s^2)\frac{\rho v_1v_2}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_y^4\rho}$ at $\frac{\partial^4\rho}{\partial x_2^4}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^4\rho} = (c_s^2\omega + 6v_2^4 + 3\omega v_2^2 + 2c_s^4 - 3\omega v_2^4 + 24c_s^2v_2^2 - c_s^4\omega - 2c_s^2 - 6v_2^2 - 12c_s^2\omega v_2^2)\frac{v_3}{24\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho} =$
$(-432\omega_{16}^2\omega_{10}\omega_7c_s^2v_2^2 + 30\omega_{16}\omega_{10}^2\omega_7^2v_2^2 + 288\omega_{16}^2\omega_7c_s^2v_2^2 - 14\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 12\omega_{16}^2\omega_7^2c_s^2 - \omega_{16}^2\omega_{10}^2\omega_7^2c_s^4 - 48\omega_{16}\omega_{10}^2v_2^4 + 24\omega_{16}\omega_{10}\omega_7^2v_2^4 + 12\omega_{10}^2\omega_7^2c_s^4 + 24\omega_{10}^2\omega_7c_s^2 + 48\omega_{16}\omega_{10}\omega_7v_2^2 + 96\omega_{16}\omega_{10}^2\omega_7v_2^4 - 144\omega_{16}\omega_{10}\omega_7c_s^2v_2^2 + 24\omega_{16}^2\omega_7c_s^4 + 48\omega_{16}^2\omega_{10}v_2^4 - 48\omega_{16}^2\omega_{10}\omega_7c_s^4 + 12\omega_{10}^2\omega_7^2v_2^4 + 72\omega_{10}^2\omega_7^2c_s^2v_2^2 - 24\omega_{16}\omega_{10}^2c_s^4 - 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^4 - 36\omega_{16}^2\omega_{10}\omega_7^2v_2^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2v_2^2 + 36\omega_{16}^2\omega_7^2v_2^2 + 12\omega_{16}\omega_{10}^2\omega_7^2c_s^2 + 72\omega_{16}^2\omega_7v_2^4 - 96\omega_{16}^2\omega_{10}\omega_7v_2^4 - 126\omega_{16}\omega_{10}^2\omega_7^2c_s^2v_2^2 + 24\omega_{16}^2\omega_{10}c_s^4 + 48\omega_{16}\omega_{10}^2\omega_7c_s^4 + 24\omega_{10}^2\omega_7v_2^2 + 36\omega_{16}^2\omega_{10}\omega_7^2v_2^4 - 144\omega_{10}^2\omega_7c_s^2v_2^2 - 36\omega_{16}^2\omega_7^2v_2^2 - 12\omega_{16}\omega_{10}^2\omega_7^2c_s^4 - 12\omega_{10}^2\omega_7^2v_2^2 + 24\omega_{16}\omega_{10}^2c_s^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2 - 24\omega_{10}^2\omega_7v_2^4 + 432\omega_{16}\omega_{10}^2\omega_7c_s^2v_2^2 - 72\omega_{16}^2\omega_7v_2^2 + 216\omega_{16}^2\omega_{10}c_s^2v_2^2 + 96\omega_{16}^2\omega_{10}\omega_7v_2^2 - 24\omega_{16}^2\omega_{10}c_s^2 - 48\omega_{16}\omega_{10}^2\omega_7c_s^2 + \omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 144\omega_{16}^2\omega_7^2c_s^2v_2^2 + 48\omega_{16}\omega_{10}^2v_2^2 - 12\omega_{10}^2\omega_7^2c_s^2 - 24\omega_{16}\omega_{10}\omega_7^2v_2^2 + 150\omega_{16}^2\omega_{10}\omega_7^2c_s^2v_2^2 - 30\omega_{16}\omega_{10}^2\omega_7^2v_2^4 + 14\omega_{16}^2\omega_{10}\omega_7^2c_s^4 - 12\omega_{16}^2\omega_7^2c_s^4 - 96\omega_{16}\omega_{10}^2\omega_7v_2^2 - 216\omega_{16}\omega_{10}^2c_s^2v_2^2 - 24\omega_{16}^2\omega_7c_s^2 - 48\omega_{16}^2\omega_{10}v_2^2 + 48\omega_{16}^2\omega_{10}\omega_7c_s^2 - 48\omega_{16}\omega_{10}\omega_7v_2^4 - 24\omega_{10}^2\omega_7c_s^4 + 72\omega_{16}\omega_{10}\omega_7^2c_s^2v_2^2)\frac{v_3}{24\omega_{16}^2\omega_{10}^2\omega_7^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^4\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho} = (6v_2^4 - 3\omega_{10}v_2^4 - \omega_{10}c_s^4 + 2c_s^4 + \omega_{10}c_s^2 + 24c_s^2v_2^2 - 12\omega_{10}c_s^2v_2^2 - 2c_s^2 - 6v_2^2 + 3\omega_{10}v_2^2)\frac{v_3}{24\omega_{10}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^4\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^4\rho} = (c_s^2\omega_5 + 6v_2^4 + 3\omega_5v_2^2 + 2c_s^4 - 12c_s^2\omega_5v_2^2 - c_s^4\omega_5 + 24c_s^2v_2^2 - 2c_s^2 - 6v_2^2 - 3\omega_5v_2^4)\frac{v_3}{24\omega_5}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^4\rho} = (-6\omega_1v_2^2 - 9\omega_1v_2^4\omega_2 + 2c_s^4\omega_1 - 12v_2^2\omega_2 + 4c_s^4\omega_2 - 3c_s^4\omega_1\omega_2 + 9\omega_1v_2^2\omega_2 + 24c_s^2\omega_1v_2^2 - 2c_s^2\omega_1 + 12v_2^4\omega_2 - 4c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 36c_s^2\omega_1v_2^2\omega_2 + 48c_s^2v_2^2\omega_2 + 6\omega_1v_2^4)\frac{v_3}{72\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y^4 v_2}$ at $\frac{\partial^4 v_2}{\partial x_2^4}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^4 v_2} = (-4 - 3c_s^2\omega - 5\omega v_2^2 + 2\omega + 6c_s^2 + 10v_2^2)\frac{\rho v_2v_3}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^4 v_2} = (-51\omega_{16}\omega_{10}^2\omega_7^2v_2^2 + 39\omega_{16}^2\omega_{10}\omega_7^2c_s^2 - 12\omega_{16}\omega_{10}\omega_7^2 + 36\omega_{16}\omega_{10}^2 - 36\omega_{16}^2\omega_7^2c_s^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2 - 12\omega_{10}^2\omega_7^2 - 48\omega_{10}^2\omega_7c_s^2 - 72\omega_{16}\omega_{10}\omega_7v_2^2 + 61\omega_{16}^2\omega_{10}\omega_7^2v_2^2 + 24\omega_{10}^2\omega_7 - 60\omega_{16}^2\omega_7^2v_2^2 - 33\omega_{16}\omega_{10}^2\omega_7^2c_s^2 - 24\omega_{16}\omega_{10}\omega_7c_s^2 - 48\omega_{10}^2\omega_7v_2^2 + 24\omega_{16}\omega_{10}\omega_7 + 12\omega_{16}\omega_{10}\omega_7^2c_s^2 +$

$24\omega_{10}^2\omega_7^2v_2^2 - 36\omega_{16}^2\omega_{10} - 60\omega_{16}\omega_{10}^2c_s^2 - 5\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2 - 72\omega_{16}\omega_{10}^2\omega_7 + 120\omega_{16}^2\omega_7v_2^2 - 168\omega_{16}^2\omega_{10}\omega_7v_2^2 + 72\omega_{16}^2\omega_{10}\omega_7 + 60\omega_{16}^2\omega_{10}c_s^2 - 48\omega_{16}^2\omega_7 + 120\omega_{16}\omega_{10}^2\omega_7c_s^2 + 24\omega_{16}^2\omega_7^2 - 3\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2 - 25\omega_{16}^2\omega_{10}\omega_7^2 - 84\omega_{16}\omega_{10}^2v_2^2 + 24\omega_{10}^2\omega_7^2c_s^2 + 36\omega_{16}\omega_{10}\omega_7^2v_2^2 + 168\omega_{16}\omega_{10}^2\omega_7v_2^2 + 72\omega_{16}^2\omega_7c_s^2 + 21\omega_{16}\omega_{10}^2\omega_7^2 + 84\omega_{16}^2\omega_{10}v_2^2 - 120\omega_{16}^2\omega_{10}\omega_7c_s^2)\frac{\rho v_2v_3}{12\omega_{16}^2\omega_{10}^2\omega_7^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^4v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^4v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^4v_2} = (-4 + 2\omega_{10} - 3\omega_{10}c_s^2 + 6c_s^2 + 10v_2^2 - 5\omega_{10}v_2^2)\frac{\rho v_2v_3}{12\omega_{10}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^4v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^4v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^4v_2} = (-4 - 3c_s^2\omega_5 - 5\omega_5v_2^2 + 2\omega_5 + 6c_s^2 + 10v_2^2)\frac{\rho v_2v_3}{12\omega_5}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^4v_2} = (10\omega_1v_2^2 + 20v_2^2\omega_2 + 6\omega_1\omega_2 - 4\omega_1 - 15\omega_1v_2^2\omega_2 + 6c_s^2\omega_1 - 8\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2)\frac{\rho v_2v_3}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y^4v_3}$ **at** $\frac{\partial^4v_3}{\partial x_2^4}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^4v_3} = (-84c_s^2\omega^2v_2^2 + 36c_s^2\omega + 3\omega^3v_2^4 - 72v_2^4 + c_s^2\omega^3 - 108\omega v_2^2 + 6c_s^2\omega^3v_2^2 - 14c_s^2\omega^2 + 48c_s^4 - 42\omega^2v_2^4 + 108\omega v_2^4 + 42\omega^2v_2^2 - 144c_s^2v_2^2 - 72c_s^4\omega - 24c_s^2 + 30c_s^4\omega^2 + 72v_2^2 - 3c_s^4\omega^3 + 216c_s^2\omega v_2^2 - 3\omega^3v_2^2)\frac{\rho}{24\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^4v_3} = (156\omega_{16}^2\omega_7c_s^2v_2^2 - 12\omega_7^3v_2^2 - 8\omega_{16}^2\omega_7^2c_s^2 - 3\omega_{16}^2\omega_7^3v_2^2 - 18\omega_{16}\omega_7^3v_2^4 - 24\omega_{16}\omega_7^2c_s^4 - 24\omega_{16}\omega_7c_s^2 - 48\omega_{16}^2\omega_7c_s^4 + 72\omega_{16}\omega_7^2v_2^4 + 6\omega_{16}\omega_7^3c_s^4 + 24\omega_7^2v_2^2 + \omega_{16}^2\omega_7^3c_s^2 + 24\omega_{16}^2\omega_7^2v_2^2 + 48\omega_{16}\omega_7^2c_s^2v_2^2 + 24\omega_{16}^2\omega_7v_2^4 + 24\omega_{16}^2c_s^4 + 6\omega_{16}^2\omega_7^3c_s^2v_2^2 + 48\omega_{16}\omega_7v_2^2 + 12\omega_7^3c_s^2v_2^2 - 24\omega_7^2v_2^4 - 3\omega_{16}^2\omega_7^3c_s^4 - 24\omega_{16}^2\omega_7^2v_2^4 - 24\omega_{16}\omega_7c_s^2v_2^2 - 72\omega_{16}\omega_7^2v_2^2 - 6\omega_{16}\omega_7^3c_s^2 - 48\omega_{16}\omega_7v_2^4 - 24\omega_{16}^2\omega_7v_2^2 - 96\omega_{16}^2c_s^2v_2^2 + 18\omega_{16}\omega_7^3v_2^2 + 24\omega_{16}\omega_7^2c_s^2 - 72\omega_{16}^2\omega_7^2c_s^2v_2^2 - 24\omega_7^2c_s^2v_2^2 + 12\omega_7^3v_2^4 + 24\omega_{16}^2\omega_7^2c_s^4 + 3\omega_{16}^2\omega_7^3v_2^4 - 12\omega_{16}\omega_7^3c_s^2v_2^2 + 12\omega_{16}^2\omega_7c_s^2 + 24\omega_{16}\omega_7c_s^4)\frac{\rho}{24\omega_{16}^2\omega_7^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^4v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^4v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^4v_3} = (-36\omega_{16}^2\omega_7c_s^2v_2^2 - 36\omega_7^3v_2^2 - 8\omega_{16}^2\omega_7^2c_s^2 - 3\omega_{16}^2\omega_7^3v_2^2 - 30\omega_{16}\omega_7^3v_2^4 - 24\omega_{16}\omega_7^2c_s^4 - 24\omega_{16}\omega_7c_s^2 - 48\omega_{16}^2\omega_7c_s^4 + 72\omega_{16}\omega_7^2v_2^4 + 6\omega_{16}\omega_7^3c_s^4 + 72\omega_7^2v_2^2 + \omega_{16}^2\omega_7^3c_s^2 + 12\omega_{16}^2\omega_7^2v_2^2 + 144\omega_{16}\omega_7^2c_s^2v_2^2 + 24\omega_{16}^2c_s^4 + 6\omega_{16}^2\omega_7^3c_s^2v_2^2 + 108\omega_7^3c_s^2v_2^2 - 72\omega_7^2v_2^4 - 3\omega_{16}^2\omega_7^3c_s^4 - 12\omega_{16}^2\omega_7^2v_2^4 + 72\omega_{16}\omega_7c_s^2v_2^2 - 72\omega_{16}\omega_7^2v_2^2 - 6\omega_{16}\omega_7^3c_s^2 + 30\omega_{16}\omega_7^3v_2^2 + 24\omega_{16}\omega_7^2c_s^2 - 12\omega_{16}^2\omega_7^2c_s^2v_2^2 - 216\omega_7^2c_s^2v_2^2 + 36\omega_7^3v_2^4 + 24\omega_{16}^2\omega_7^2c_s^4 + 3\omega_{16}^2\omega_7^3v_2^4 - 72\omega_{16}\omega_7^3c_s^2v_2^2 + 12\omega_{16}^2\omega_7c_s^2 + 24\omega_{16}\omega_7c_s^4)\frac{\rho}{24\omega_{16}^2\omega_7^3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^4v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^4v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^4v_3} = (30\omega_3^3\omega_{11}v_2^2 - 8\omega_3^2c_s^2\omega_{11}^2 + 24\omega_3c_s^4\omega_{11} + 108\omega_3^3c_s^2v_2^2 - 3\omega_3^3c_s^4\omega_{11}^2 + 144\omega_3^2c_s^2\omega_{11}v_2^2 + 3\omega_3^3\omega_{11}^2v_2^4 - 36\omega_3^3v_2^2 - 72\omega_3^3c_s^2\omega_{11}v_2^2 - 36\omega_3c_s^2\omega_{11}^2v_2^2 + 12\omega_3^2\omega_{11}^2v_2^2 + 72\omega_3^2v_2^2 - 48\omega_3c_s^4\omega_{11}^2 + 72\omega_3^2\omega_{11}v_2^4 + 6\omega_3^3c_s^4\omega_{11} + 24\omega_3^2c_s^2\omega_{11} - 12\omega_3^2\omega_{11}^2v_2^4 + 6\omega_3^3c_s^2\omega_{11}^2v_2^2 + 24\omega_3^2c_s^4\omega_{11}^2 - 216\omega_3^2c_s^2v_2^2 - 72\omega_3^2v_2^4 - 24\omega_3c_s^2\omega_{11} + 72\omega_3c_s^2\omega_{11}v_2^2 - 72\omega_3^2\omega_{11}v_2^2 + 24c_s^4\omega_{11}^2 + \omega_3^3c_s^2\omega_{11}^2 + 12\omega_3c_s^2\omega_{11}^2 - 12\omega_3^2c_s^2\omega_{11}^2v_2^2 - 6\omega_3^3c_s^2\omega_{11} - 30\omega_3^3\omega_{11}v_2^4 - 24\omega_3^2c_s^4\omega_{11} - 3\omega_3^3\omega_{11}^2v_2^2 + 36\omega_3^3v_2^4)\frac{\rho}{24\omega_3^3\omega_{11}^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^4v_3} = (-12\omega_3^2\omega_4c_s^4\omega_1^2 - 15\omega_3^2\omega_4\omega_1^3v_2^4 - 12\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2 + 36\omega_3\omega_4^2\omega_1^2v_2^4 + 36\omega_3\omega_4\omega_1^2v_2^2 - 3\omega_3^2\omega_4^2\omega_1^3v_2^2 + 12\omega_3^2\omega_4^2c_s^2\omega_1 - 9\omega_4^2\omega_1^3v_2^2 - 18\omega_3^2\omega_1^2v_2^4 + 12\omega_3\omega_4^2c_s^4\omega_1 + 27\omega_4^2c_s^2\omega_1^3v_2^2 + 3\omega_3^2\omega_4c_s^4\omega_1^3 + 27\omega_3^2c_s^2\omega_1^3v_2^2 + 24\omega_3^2\omega_4^2c_s^4 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_2^2 + \omega_3^2\omega_4^2c_s^2\omega_1^3 + 12\omega_3^2\omega_4^2\omega_1^2v_2^2 - 18\omega_3\omega_4\omega_1^3v_2^2 - 15\omega_3\omega_4^2\omega_1^3v_2^4 - 12\omega_3\omega_4^2c_s^4\omega_1^2 + 36\omega_3^2\omega_4\omega_1^2v_2^4 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 - 54\omega_3^2c_s^2\omega_1^2v_2^2 - 36\omega_3\omega_4^2c_s^2\omega_1^3v_2^2 - 8\omega_3^2\omega_4^2c_s^2\omega_1^2 + 12\omega_3^2\omega_4c_s^4\omega_1 + 9\omega_3^2\omega_1^3v_2^4 + 18\omega_4^2\omega_1^2v_2^2 + 36\omega_3^2\omega_4c_s^2\omega_1v_2^2 + 3\omega_3\omega_4^2c_s^4\omega_1^3 - 54\omega_4^2c_s^2\omega_1^2v_2^2 - 12\omega_3\omega_4^2c_s^2\omega_1 + 15\omega_3\omega_4^2\omega_1^3v_2^2 - 36\omega_3^2\omega_4\omega_1^2v_2^2 - 3\omega_3^2\omega_4c_s^2\omega_1^3 - 12\omega_3^2\omega_4^2\omega_1^2v_2^4 + 18\omega_3\omega_4\omega_1^3v_2^4 + 72\omega_3^2\omega_4c_s^2\omega_1^2v_2^2 + 12\omega_3^2\omega_4c_s^2\omega_1^2 - 18\omega_4^2\omega_1^2v_2^4 - 9\omega_3^2\omega_1^3v_2^2 - 108\omega_3\omega_4c_s^2\omega_1^2v_2^2 - 48\omega_3^2\omega_4^2c_s^4\omega_1 - 36\omega_3\omega_4\omega_1^2v_2^4 - 36\omega_3^2\omega_4c_s^2\omega_1^3v_2^2 + 3\omega_3^2\omega_4^2\omega_1^3v_2^4 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2 + 36\omega_3\omega_4^2c_s^2\omega_1v_2^2 + 15\omega_3^2\omega_4\omega_1^3v_2^2 - 12\omega_3^2\omega_4c_s^2\omega_1 - 3\omega_3\omega_4^2c_s^2\omega_1^3 - 36\omega_3\omega_4^2\omega_1^2v_2^2 - 3\omega_3^2\omega_4^2c_s^4\omega_1^3 - 36\omega_3^2\omega_4^2c_s^2\omega_1v_2^2 + 18\omega_3^2\omega_1^2v_2^2 + 9\omega_4^2\omega_1^3v_2^4 + 12\omega_3\omega_4^2c_s^2\omega_1^2 + 54\omega_3\omega_4c_s^2\omega_1^3v_2^2)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^3\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = (24 - 24v_1^2 + \omega^3v_1^2 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 3c_s^2\omega^3 - 14\omega^2v_1^2 - 42c_s^2\omega^2 - 36\omega + 36\omega v_1^2 - 72c_s^2)\frac{c_s^2v_1}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = (-12\omega_6^3\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 48\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9^2 - 108\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_9 - 6\omega_6^3\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 18\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^2 - \omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_9 + 144\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_9 - 36\omega_6^3\omega_{13}^2c_s^4\omega_{11}\omega_9^2 + 36\omega_6^2\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 + 72\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18} - 12\omega_6^2\omega_{13}^2\omega_{11}v_3^2\omega_9^2 + 3\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_9 -$

$$6\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9 - 9\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9 - 3\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_9 +$$
$$12\omega_6^3\omega_{13}^2v_1^2v_3^2\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{11}v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{13}^2c_s^4\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9 +$$
$$12\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_9^2 - 5\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9 + 156\omega_6\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_9 +$$
$$48\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}c_s^4\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18} +$$
$$36\omega_6^2\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_9^2 + 36\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_9 + \omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 -$$
$$6\omega_6^3\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9 - 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{13}^2v_3^2\omega_9^2 - 18\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9 +$$
$$12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18} - 36\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_9^2 + 12\omega_6^3\omega_{13}^2c_s^2\omega_{11}\omega_9^2 - 72\omega_6^2\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{13}^2c_s^4\omega_9^2 -$$
$$18\omega_6^3\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^2 + 5\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_9 - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 +$$
$$24\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}^2v_3^2\omega_{18}\omega_9^2 + 15\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 -$$
$$36\omega_6^2\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_9 +$$
$$6\omega_6^3\omega_{13}^2c_s^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9 -$$
$$72\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 36\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_9 - 12\omega_6^2\omega_{13}^2c_s^2\omega_{11}\omega_9^2 - 6\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9^2 +$$
$$12\omega_6^2\omega_{22}\omega_{11}v_3^2\omega_{18}\omega_9^2 + 54\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9 - 24\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9 + 9\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18} -$$
$$6\omega_6^3\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 + 72\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18}\omega_9 -$$
$$36\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_9 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 + 3\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 15\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 -$$
$$12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_9 + 15\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9 - 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_9 +$$
$$12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_9 - 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_9^2 - 96\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 +$$
$$18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{13}^2c_s^4\omega_{11}\omega_9^2 + 24\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{13}^2c_s^2\omega_9^2 -$$
$$42\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^3\omega_{13}^2c_s^2v_3^2\omega_9^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2 +$$
$$24\omega_6\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9^2 - 45\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9 - 24\omega_6\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^2 +$$
$$36\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_9 + 27\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18} + 18\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9 - 15\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9 +$$
$$6\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_9^2 - 36\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 +$$
$$6\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18} - 36\omega_6^3\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_9^2 - 60\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^3\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2 +$$
$$12\omega_6^2\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{13}^2\omega_{11}v_3^2\omega_9^2 - 12\omega_6^2\omega_{22}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^2)\frac{v_1}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = (-6\omega_6^2\omega_{22}\omega_{13}^2\omega_{18} + 3\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11} + 12\omega_6\omega_{22}\omega_{13}^2\omega_{11} + 6\omega_6^2\omega_{22}\omega_{11}v_1^2\omega_{18}\omega_9 - 6\omega_6^2\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 +$$
$$12\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2 - 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2 + 12\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} + 6\omega_6^2\omega_{13}^2\omega_{11}v_1^2\omega_{18}\omega_9 - 6\omega_6^2\omega_{13}^2v_1^2\omega_{18}\omega_9 - 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_1^2 +$$
$$3\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 - 9\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11} + 36\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6\omega_{13}^2\omega_{11}v_1^2\omega_{18}\omega_9 +$$
$$12\omega_6^2\omega_{22}\omega_{13}^2 - 18\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6\omega_{13}^2\omega_{11}\omega_9 + 18\omega_6\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 - 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}\omega_9 - 36\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 +$$
$$12\omega_6\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 - 12\omega_6\omega_{22}\omega_{11}v_1^2\omega_{18}\omega_9 + 6\omega_6^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 18\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} + 54\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18} + 18\omega_6^2\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 -$$
$$12\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18} + 12\omega_6\omega_{13}^2\omega_{11}v_1^2\omega_9 - 3\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11} + 12\omega_6^2\omega_{13}^2v_1^2\omega_9 - 12\omega_6^2\omega_{13}^2\omega_{11}v_1^2\omega_9 -$$
$$12\omega_6^2\omega_{22}\omega_{13}^2v_1^2 + \omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18} - \omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 5\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} - 5\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18} -$$
$$18\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6\omega_{13}^2c_s^2\omega_{11}\omega_9 - 36\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18} - 12\omega_6^2\omega_{13}^2\omega_9 + 12\omega_6^2\omega_{13}^2\omega_{11}\omega_9 + 12\omega_6\omega_{22}\omega_{11}\omega_{18}\omega_9 -$$
$$36\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 18\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18} + 6\omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_{18} - 12\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 + 12\omega_6\omega_{13}^2\omega_{11}\omega_{18}\omega_9 +$$
$$36\omega_6^2\omega_{13}^2c_s^2\omega_9 - 36\omega_6\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 - 18\omega_6^2\omega_{13}^2c_s^2\omega_{18}\omega_9 - 15\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18} + 12\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}\omega_9 + 6\omega_6^2\omega_{13}^2\omega_{18}\omega_9 -$$
$$36\omega_6\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 - 6\omega_6^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 54\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2\omega_{13}^2c_s^2\omega_{11}\omega_9 - 6\omega_6^2\omega_{22}\omega_{11}\omega_{18}\omega_9)\frac{c_s^2v_1}{12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = (18c_s^2\omega_2\omega_{12}^2 - \omega_4\omega_2^2\omega_{12}^2 + v_1^2\omega_2^2\omega_{12}^2 + 12\omega_4\omega_2 + 6\omega_2^2\omega_{12} - 9\omega_4c_s^2\omega_2^2\omega_{12} + 18\omega_4v_1^2\omega_2\omega_{12} - 12\omega_4\omega_{12}^2 - 12\omega_4v_1^2\omega_2\omega_{12}^2 +$$
$$12\omega_4\omega_{12} - \omega_2^2\omega_{12}^2 - 6\omega_4\omega_2^2 + 3\omega_4c_s^2\omega_2^2\omega_{12}^2 - 6v_1^2\omega_2^2\omega_{12} + 36c_s^2\omega_2\omega_{12} + 3\omega_4\omega_2^2\omega_{12} + 6\omega_4v_1^2\omega_2^2 + 12v_1^2\omega_2\omega_{12} - 36\omega_4c_s^2\omega_2 + 36\omega_4c_s^2\omega_{12}^2 -$$
$$18\omega_4\omega_2\omega_{12} - 12\omega_4v_1^2\omega_{12} - 18c_s^2\omega_2^2\omega_{12} + 12\omega_{12}^2 + \omega_4v_1^2\omega_2^2\omega_{12}^2 - 6\omega_2\omega_{12}^2 - 12v_1^2\omega_{12}^2 - 36\omega_4c_s^2\omega_2\omega_{12}^2 - 12\omega_2\omega_{12} + 54\omega_4c_s^2\omega_2\omega_{12} - 36c_s^2\omega_{12}^2 -$$
$$3\omega_4v_1^2\omega_2^2\omega_{12} - 36\omega_4c_s^2\omega_{12} + 12\omega_4\omega_2\omega_{12}^2 + 3c_s^2\omega_2^2\omega_{12}^2 + 12\omega_4v_1^2\omega_{12}^2 + 6v_1^2\omega_2\omega_{12}^2 - 12\omega_4v_1^2\omega_2 + 18\omega_4c_s^2\omega_2^2)\frac{c_s^2v_1}{12\omega_4\omega_2^2\omega_{12}^2}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = (-108\omega_4^2c_s^4\omega_1^2\omega_2^3 - 78\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^4 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 412\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 -$$
$$72\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 + 52\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 + 36\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 784\omega_3^2\omega_4^2c_s^2v_1^2\omega_2^3 - 18\omega_4^2c_s^2\omega_1^3\omega_2^3 +$$
$$208\omega_3^2\omega_4^2c_s^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 460\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 + 72\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 - 96\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4 +$$
$$208\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 6\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^2 + 184\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 92\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 108\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 - 104\omega_3^2\omega_4^2c_s^2\omega_1^3 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 + 36\omega_4^2c_s^2\omega_1^2\omega_2^3 +$$
$$32\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 118\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 216\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 18\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 + 48\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 152\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 +$$
$$36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 18\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 120\omega_3^2\omega_4^2v_1^2v_1^4\omega_2 + 54\omega_4^2c_s^4\omega_1^3\omega_2^3 + 160\omega_3^2\omega_4^2v_1^2\omega_2^3 - 88\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 +$$
$$18\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 + 120\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3 - 256\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 40\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 + 448\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2 -$$
$$342\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 276\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 - 16\omega_3^2\omega_4^2\omega_2^3 - 288\omega_3^2\omega_4^2c_s^4\omega_2^3 + 104\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 56\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 +$$
$$6\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 78\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 588\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 9\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 92\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 16\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 -$$
$$168\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 144\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 18\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 320\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 + 394\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 -$$
$$56\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^2 + 228\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 - 712\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 - 36\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^2 - 36\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 - 368\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 +$$
$$108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3 - 24\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2 + 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^4 + 1232\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 - 132\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 -$$
$$9\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 + 56\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 - 36\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 - 136\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 56\omega_3^2\omega_4^2\omega_1^3v_1^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 - 144\omega_3^2\omega_4^2v_1^4\omega_2^3)\frac{v_1}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(3)}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3 \partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (-12 + 36v_1^2 - 6\omega^2 - c_s^2\omega^3 + 18\omega^2 v_1^2 + 2c_s^2\omega^2 + 18\omega - 54\omega v_1^2)\frac{c_s^2\rho}{12\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} =$$
$$(-36\omega_6^3\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_9^2 + 60\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 48\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_9 -$$
$$6\omega_6^3\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 48\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 18\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^2 +$$
$$12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_9 + 48\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_9 - 12\omega_6^3\omega_{13}^2c_s^4\omega_{11}\omega_9^2 +$$
$$12\omega_6^2\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18} -$$
$$12\omega_6^2\omega_{13}^2\omega_{11}v_3^2\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^3\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{22}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9 -$$
$$9\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9 + 30\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_9 + 36\omega_6^3\omega_{13}^2v_1^2v_3^2\omega_9^2 -$$
$$6\omega_6^3\omega_{22}\omega_{11}v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{13}^2c_s^4\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9 + 36\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_9^2 -$$
$$15\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9 + 18\omega_6\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_9 + 144\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 +$$
$$12\omega_6^2\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18} + 12\omega_6^2\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_9 -$$
$$36\omega_6^2\omega_{22}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2 -$$
$$12\omega_6^3\omega_{13}^2v_3^2\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18} - 108\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - 36\omega_6^3\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_9^2 + 12\omega_6^3\omega_{13}^2c_s^2\omega_{11}\omega_9^2 -$$
$$24\omega_6^2\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{13}^2c_s^4\omega_9^2 - 6\omega_6^3\omega_{13}^2c_s^2v_3^2\omega_{18}\omega_9^2 + 5\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9 - 36\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_9 +$$
$$60\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}^2v_3^2\omega_{18}\omega_9^2 + 15\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9^2 - 36\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{18}\omega_9 +$$
$$6\omega_6^3\omega_{22}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 +$$
$$36\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_9 + 6\omega_6^3\omega_{13}^2c_s^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2 + \omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{18}\omega_9 -$$
$$24\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_9 - 12\omega_6^2\omega_{13}^2c_s^2\omega_{11}\omega_9^2 - 18\omega_6^3\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9^2 +$$
$$12\omega_6^2\omega_{22}\omega_{11}v_3^2\omega_{18}\omega_9^2 + 18\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9 - 24\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9 + 27\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18} -$$
$$18\omega_6^3\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9^2 - 72\omega_6^2\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 15\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 + 24\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18}\omega_9 -$$
$$12\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_3^2\omega_9 - 18\omega_6^3\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - \omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 45\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 -$$
$$12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}^2c_s^2v_1^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_9 +$$
$$12\omega_6^2\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_9^2 - 12\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9 - 18\omega_6^3\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}^2c_s^4\omega_{11}\omega_9^2 +$$
$$72\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{13}^2c_s^2\omega_9^2 - 18\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3\omega_{13}^2c_s^2v_3^2\omega_9^2 -$$
$$12\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9^2 + 24\omega_6\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9^2 - 15\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}\omega_9^2 + 72\omega_6^2\omega_{22}\omega_{13}^2v_1^2v_3^2\omega_{18}\omega_9 - 72\omega_6\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9^2 -$$
$$12\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_9 + 9\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_{18} + 54\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9 -$$
$$5\omega_6^3\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{13}\omega_{11}v_1^2v_3^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_9 - 102\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 +$$
$$18\omega_6^3\omega_{13}^2c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18} - 12\omega_6^3\omega_{13}^2c_s^2\omega_{11}v_3^2\omega_9^2 - 5\omega_6^2\omega_{22}\omega_{13}^2c_s^4\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{13}c_s^4\omega_{11}\omega_{18}\omega_9^2 +$$
$$36\omega_6^2\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{13}^2\omega_{11}v_3^2\omega_9^2 + 24\omega_6^2\omega_{22}c_s^2\omega_{11}v_1^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}\omega_9^2)\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (36\omega_6^3\omega_{13}v_1^2\omega_9 + 36\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2 - 12\omega_6^2\omega_{13}\omega_{11}\omega_9 + 6\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 - 54\omega_6^2\omega_{22}\omega_{11}v_1^2\omega_{18}\omega_9 -$$
$$36\omega_6^2\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11} - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18} - 6\omega_6^3c_s^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11} - 6\omega_6^3\omega_{22}\omega_{11}\omega_{18}\omega_9 -$$
$$36\omega_6^3\omega_{22}\omega_{13}v_1^2 + 54\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18} + \omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 + 36\omega_6^2\omega_{13}\omega_{11}v_1^2\omega_9 - 5\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18} +$$
$$6\omega_6^3\omega_{13}\omega_{18}\omega_9 + 12\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^2\omega_{11}v_1^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{13}\omega_{11}\omega_9 - 18\omega_6^3\omega_{13}v_1^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_9 -$$
$$12\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11} + 36\omega_6\omega_{22}\omega_{11}v_1^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18} + 12\omega_6^3\omega_{13}c_s^2\omega_9 -$$
$$18\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_{18} - 18\omega_6^3\omega_{11}v_1^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{13} - 12\omega_6^3\omega_{22}\omega_{13}c_s^2 - 12\omega_6^3\omega_{13}\omega_9 - 3\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 -$$
$$15\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18} - 6\omega_6^3\omega_{13}c_s^2\omega_{18}\omega_9 + 5\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18} + 18\omega_6^3\omega_{13}\omega_{11}v_1^2\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}\omega_{11}v_1^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{13}\omega_{11}\omega_{18}\omega_9 -$$
$$12\omega_6^3\omega_{13}c_s^2\omega_{11}\omega_9 - 12\omega_6^2\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 + 6\omega_6^3\omega_{11}\omega_{18}\omega_9 - 18\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18} + 18\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18} -$$
$$12\omega_6\omega_{22}\omega_{11}\omega_{18}\omega_9 - 5\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18} - 12\omega_6^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2 + 12\omega_6\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^3\omega_{13}\omega_{11}v_1^2\omega_9 -$$
$$12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11} + 18\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}\omega_{11}\omega_{18}\omega_9 + 12\omega_6^2c_s^2\omega_{11}\omega_{18}\omega_9)\frac{c_s^2\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (-12\omega_4\omega_2 - 6\omega_2^2\omega_{12} - 5\omega_4c_s^2\omega_2^2\omega_{12} + 3v_1^2\omega_2^3\omega_{12} + 18\omega_4\omega_2^2 + 18v_1^2\omega_2^2\omega_{12} - \omega_4c_s^2\omega_2^3\omega_{12} - 6\omega_4\omega_2^3 - 12c_s^2\omega_2\omega_{12} - \omega_2^3\omega_{12} +$$
$$\omega_4\omega_2^2\omega_{12} - 54\omega_4v_1^2\omega_2^2 - 36v_1^2\omega_2\omega_{12} - 6c_s^2\omega_2^3 + 12\omega_4c_s^2\omega_2 + 6c_s^2\omega_2^2\omega_{12} + 12c_s^2\omega_2^2 + 18\omega_4v_1^2\omega_2^3 + 12\omega_2\omega_{12} + c_s^2\omega_2^3\omega_{12} + 18\omega_4c_s^2\omega_2\omega_{12} +$$
$$6\omega_4c_s^2\omega_2^3 - 3\omega_4v_1^2\omega_2^2\omega_{12} + 36v_1^2\omega_2^2 + 6\omega_2^3 - 12\omega_4c_s^2\omega_{12} - 12\omega_2^2 + 36\omega_4v_1^2\omega_2 - 18v_1^2\omega_2^3 - 18\omega_4c_s^2\omega_2^2)\frac{c_s^2\rho}{12\omega_4\omega_2^3\omega_{12}}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (3\omega_3\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 - 4\omega_3\omega_4\omega_1^2\omega_2^2 + 108\omega_3c_s^2\omega_1v_1^2\omega_2^3 + 144\omega_3\omega_4v_1^2\omega_2^3 + 81\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 24\omega_4c_s^2\omega_1^3v_1^2\omega_2 + 144\omega_3\omega_4c_s^2\omega_1^3v_1^2 -$$
$$20\omega_3\omega_4c_s^2\omega_1^3 - 28\omega_3\omega_4c_s^4\omega_1\omega_2^2 + 84\omega_3\omega_4\omega_1^2v_1^2\omega_2^2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 + 24\omega_4c_s^2\omega_1v_1^2\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 - 36\omega_3c_s^2\omega_1\omega_2^3 + 120\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2 +$$
$$94\omega_3\omega_4c_s^4\omega_1\omega_2^3 + 138\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 - 8\omega_4c_s^2\omega_1\omega_2^3 - \omega_3\omega_4\omega_1^2\omega_2^3v_3^4 - 240\omega_3\omega_4\omega_1^3v_1^4\omega_2 - 24\omega_3\omega_4\omega_1v_1^4\omega_2^2 + 27\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 - 96\omega_3\omega_4\omega_1^2v_1^2\omega_2 +$$
$$32\omega_3\omega_4c_s^2\omega_1\omega_2^2 - 90\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 408\omega_3\omega_4\omega_1v_1^4\omega_2^3 + 36\omega_3c_s^4\omega_1\omega_2^3 - 153\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 54\omega_3\omega_4c_s^2\omega_1\omega_2^3 + 40\omega_3\omega_4c_s^2\omega_2^3 +$$
$$8\omega_3\omega_4\omega_1^2\omega_2 - 54\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 + 27\omega_3c_s^2\omega_1^3v_1^2\omega_2^3 - \omega_3\omega_4\omega_1^3\omega_2^2v_3^2 + 96\omega_3\omega_4\omega_1^3v_1^4 + 8\omega_4c_s^4\omega_1\omega_2^3 - 168\omega_3\omega_4\omega_1^2v_1^4\omega_2^2 - 9\omega_4c_s^2\omega_1^3\omega_2^3 - 3\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 +$$
$$8\omega_3\omega_4c_s^4\omega_1^2\omega_2 - 36\omega_3c_s^4\omega_1^2\omega_2^3 + \omega_3\omega_4\omega_1^2\omega_2^3v_3^2 - 60\omega_3\omega_4c_s^2\omega_1v_1^2\omega_2^2 - 9\omega_3c_s^2\omega_1^3\omega_2^3 + 42\omega_3\omega_4c_s^2\omega_1^3\omega_2 + 24\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - 81\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 -$$
$$288\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2 - 18\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_4c_s^4\omega_1^3\omega_2 + 17\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 - 264\omega_3\omega_4v_1^4\omega_2^3 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 8\omega_3\omega_4\omega_2^3 + \omega_3\omega_4\omega_1^3\omega_2^2v_3^4 -$$

$60\omega_3\omega_4\omega_1^3v_1^2 - 138\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 20\omega_4c_s^4\omega_1^2\omega_2^2 - 312\omega_3\omega_4c_s^2v_1^2\omega_2^3 + 16\omega_3\omega_4c_s^4\omega_1^3 - 6\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 + 432\omega_3\omega_4c_s^2\omega_1v_1^2\omega_2^3 - 222\omega_3\omega_4\omega_1v_1^2\omega_2^3 + 9\omega_4c_s^4\omega_1^3\omega_2^3 - 16\omega_3\omega_4c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1^3 + 60\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 - 108\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 - 29\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 - 68\omega_3\omega_4c_s^4\omega_2^3 - 32\omega_3\omega_4c_s^4\omega_1^3\omega_2 - 8\omega_4c_s^2\omega_1^3\omega_2 + 18\omega_4c_s^2\omega_1^2\omega_2^3 - 24\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2^2 + 138\omega_3\omega_4\omega_1^3v_1^2\omega_2 - 54\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 + 153\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 - 3\omega_3\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 + 12\omega_3\omega_4\omega_1v_1^2\omega_2^2 - 18\omega_4c_s^4\omega_1^3\omega_2^2 + 192\omega_3\omega_4\omega_1^2v_1^4\omega_2 - 20\omega_4c_s^2\omega_1^2\omega_2^2 + 10\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (2 - 2v_1^2 + 3c_s^2\omega - \omega + \omega v_1^2 - 6c_s^2)\frac{\rho v_1 v_3}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-24\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{18}^2\omega_9^2 + 36\omega_6\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}^2 - 24\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 84\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 - 96\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{22}\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}\omega_9^2 - 42\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2 - 24\omega_6^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 3\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^3\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^3\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 72\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2 - 36\omega_6\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 66\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 90\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 66\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2\omega_9^2 + 24\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{11}^2\omega_{18}^2\omega_9^2 + 36\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2 + 72\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 24\omega_6^3\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}\omega_9^2 + 48\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9^2 - 24\omega_6^3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 66\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 + 156\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2 - 36\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{11}^2\omega_{18}^2\omega_9^2 - 132\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2 + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 24\omega_6^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}^2\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}^2 - 18\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2 + \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 18\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 60\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9^2 - 48\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^3\omega_{13}^2\omega_{11}v_1^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9 + 12\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2)\frac{\rho v_1 v_3}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (\omega_{13}v_1^2 - \omega_{13} + 3\omega_{13}c_s^2 + \omega_{13}v_1^2\omega_9 - 9c_s^2\omega_9 - \omega_{13}\omega_9 + 3\omega_{13}c_s^2\omega_9 - 3v_1^2\omega_9 + 3\omega_9)\frac{\rho v_1 v_3}{12\omega_{13}\omega_9}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-9\omega_4c_s^2 - \omega_4\omega_{12} + 3\omega_4 + \omega_4v_1^2\omega_{12} - 3\omega_4v_1^2 + 3c_s^2\omega_{12} + v_1^2\omega_{12} + 3\omega_4c_s^2\omega_{12} - \omega_{12})\frac{\rho v_1 v_3}{12\omega_4\omega_{12}}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (2\omega_3\omega_4\omega_1v_1^2 - 18\omega_3\omega_4\omega_2v_3^2 + 6\omega_3\omega_4c_s^2\omega_2 + 18\omega_3\omega_4c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4c_s^2\omega_1 + 4\omega_3\omega_4v_1^2\omega_2 - 27\omega_4c_s^2\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 6\omega_3\omega_4\omega_1v_1^2\omega_2 + 9\omega_3\omega_1\omega_2 - 9\omega_3\omega_1v_1^2\omega_2 - 9\omega_4\omega_1v_1^2\omega_2 + 18\omega_3\omega_4\omega_1v_3^2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_1 v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (36\omega v_1v_2^2v_3^2 + 24c_s^2v_1^2v_2 + 36c_s^2\omega v_1v_3^2 + 14c_s^2\omega^2v_2v_3^2 + 36c_s^2\omega v_1v_2^2 - 36\omega v_1^2v_2v_3^2 + 24c_s^2v_2v_3^2 + 14c_s^2\omega^2v_1^2v_2 + c_s^2\omega^3v_1v_2^2 + c_s^2\omega^3v_1v_3^2 - 36c_s^2\omega v_1^2v_2 - 24c_s^2v_1v_3^2 - 24c_s^2v_1v_2^2 - 24v_1v_2^2v_3^2 - 14\omega^2v_1v_2^2v_3^2 + 14\omega^2v_1^2v_2v_3^2 - c_s^2\omega^3v_2v_3^2 + 24v_1^2v_2v_3^2 - 36c_s^2\omega v_2v_3^2 - 14c_s^2\omega^2v_1v_3^2 - 14c_s^2\omega^2v_1v_2^2 - \omega^3v_1^2v_2v_3^2 + \omega^3v_1v_2^2v_3^2 - c_s^2\omega^3v_1^2v_2)\frac{1}{2\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_2v_3^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} + 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2v_2v_3^2 - 2\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1v_2^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1v_2^2\omega_{18} + 12\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_3^2 - 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1v_2^2v_3^2 + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - \omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_2v_3^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1^2v_2v_3^2\omega_{18} - \omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2 - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2 - \omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1^2v_2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} -$

$\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1v_2^2v_3^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1^2v_2\omega_{18} -$
$\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2 +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2v_2 + \omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2 + \omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2v_2v_3^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1v_3^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2v_2v_3^2 + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2v_2 - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2 + \omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1v_2^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1v_2^2v_3^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2 +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2 -$
$2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2^2v_3^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2v_2v_3^2\omega_{18} + \omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2 -$
$\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1^2v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2 - \omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_2v_3^2 - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} -$
$\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - \omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} + \omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} + \omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1v_2^2\omega_{18} -$
$2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2v_1^2v_2\omega_{18} + \omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2 + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1^2v_2 +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2 - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_3^2 +$
$\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8^2v_1^2v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1v_2^2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} -$
$\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1v_2^2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} -$
$\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1v_2^2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} -$
$\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2v_2 +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2 - \omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} - \omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} +$

$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2^2 +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1^2v_2v_3^2 + 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_2v_3^2 +$
$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} + \omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2 -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1^2v_2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2 + 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_3^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2\omega_{18} + 8\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1v_2^2v_3^2 - \omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2 - \omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2 -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2 + \omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} - 8\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1^2v_2v_3^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8^2v_1^2v_2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1v_2^2v_3^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2v_2\omega_{18})\frac{1}{2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}v_1v_3^2\omega_{18} - 2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_1v_2^2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}v_1v_3^2\omega_{18} + 2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_3^2 +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2 +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2 - \omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2v_2 - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3^2 +$
$\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2 - 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2 +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}v_1^2v_2\omega_{18} - 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2^2 +$
$\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} + \omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2 -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}v_1^2v_2v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1^2v_2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}v_1^2v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_1v_2^2v_3^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}v_1v_2^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2 + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2 -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}v_1v_2^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_3^2 + \omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_2v_3^2\omega_{18} -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2 - \omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2v_2\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} + 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} +$
$\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1v_2^2 + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1v_2^2v_3^2\omega_{18} +$
$2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2 - 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2^2v_3^2 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2^2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1v_3^2 +$
$\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_2v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_1^2v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2v_3^2 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2v_2v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2 + 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_3^2 - 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2 + 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} +$
$\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2^2v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}v_1v_2^2v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_3^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} - \omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}v_1v_2^2v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1^2v_2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2v_2v_3^2 + 2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} -$
$\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2^2 +$
$\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}v_1^2v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2 -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} + 2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_3^2\omega_{18} + 2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2 + \omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1^2v_2v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} -$
$2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2 + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} +$

$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1v_2^2v_3^2\omega_{18} - \omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_1v_2^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1v_2^2v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}v_1^2v_2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1^2v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}v_2v_3^2\omega_{18} +$
$2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2v_3^2 - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} -$
$2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2 - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2^2\omega_{18} - \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}v_2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_2v_3^2 - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_3^2 + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_1v_2^2\omega_{18} - 2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2 - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} -$
$2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2 + \omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_1v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_1v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2 - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} +$
$2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2 + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_1^2v_2\omega_{18} + 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2v_2 - \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8v_1^2v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_1^2v_2\omega_{18} + 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2v_2v_3^2\omega_{18} + \omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1^2v_2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1^2v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_1v_2^2v_3^2 +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_1v_2^2\omega_{18} + 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2v_3^2 -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1^2v_2v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2 + \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_1v_2^2\omega_{18} +$
$\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_3^2\omega_{18} -$
$2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2 + \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1^2v_2\omega_{18} + 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2 -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2v_2v_3^2 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1^2v_2 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1^2v_2v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2 +$
$2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1v_2^2v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1^2v_2\omega_{18} +$
$\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} + \omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1v_2^2v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_1^2v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2v_2v_3^2 + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2 -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2^2v_3^2 + \omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_1v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2v_3^2 +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2v_2v_3^2 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_1v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2 -$
$\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_2v_3^2\omega_{18})\frac{1}{2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (-252\omega_4^2c_s^4\omega_1^2\omega_2^3 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 864\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 8\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 - 56\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 -$
$108\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 30\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 81\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 - 176\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 + 432\omega_3^2\omega_4^2c_s^2v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3v_2^2 - 84\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 -$
$54\omega_4^2c_s^2\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 - 104\omega_3^2\omega_4^2c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 64\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 72\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 + 72\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2 +$
$48\omega_3^2\omega_4^2\omega_1^3v_1^4 + 72\omega_3^2\omega_4^2v_1^2v_2^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 24\omega_4^2c_s^2\omega_1^3\omega_2^2 + 108\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 112\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 10\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 27\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 -$
$104\omega_3^2\omega_4^2c_s^2\omega_1^3 - 16\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 60\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^3 + 84\omega_4^2c_s^2\omega_1^2\omega_2^3 - 56\omega_3\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 10\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 +$
$324\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 24\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 96\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 + 192\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 27\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 -$
$72\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2 + 162\omega_4^2c_s^4\omega_1^3\omega_2^3 - 96\omega_3^2\omega_4^2v_1^2\omega_2^3 + 32\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 - 8\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 80\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 192\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 + 27\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 +$
$96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2 - 72\omega_4^2c_s^4\omega_1^3\omega_2^2 + 10\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 432\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2 - 30\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 -$
$168\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_2^3 + 144\omega_3^2\omega_4^2c_s^4\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 24\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2 - 24\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 54\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 + 108\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 -$
$192\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 8\omega_3^2\omega_4^2v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 64\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 + 108\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 +$
$54\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 - 168\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 216\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 8\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 81\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 432\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 +$
$32\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 432\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 - 432\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 + 32\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 + 64\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 - 108\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 -$
$324\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3 + 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 60\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2\omega_2 - 432\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 - 10\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 -$
$36\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 + 128\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 120\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2 - 27\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2v_1^4\omega_2^3)\frac{v_2}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (-14c_s^2\omega^2v_3^2 - 2\omega^3v_1v_2v_3^2 - 14c_s^2\omega^2v_2^2 - 24v_2^2v_3^2 - 2c_s^2\omega^3v_1v_2 + \omega^3v_2^2v_3^2 + c_s^2\omega^3v_2^2 + 36\omega v_2^2v_3^2 + c_s^2\omega^3v_3^2 - 72c_s^2\omega v_1v_2 +$$
$$48v_1v_2v_3^2 + 28\omega^2v_1v_2v_3^2 - 14\omega^2v_2^2v_3^2 + 28c_s^2\omega^2v_1v_2 - 24c_s^2v_3^2 - 24c_s^2v_2^2 + 48c_s^2v_1v_2 - 72\omega v_1v_2v_3^2 + 36c_s^2\omega v_3^2 + 36c_s^2\omega v_2^2)\frac{\rho}{2\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} +$$
$$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1v_2v_3^2\omega_{18} - \omega_6^3\omega_{22}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} -$$
$$2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_3^2 - \omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} +$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2^2v_3^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} -$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1v_2v_3^2\omega_{18} -$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_2^2\omega_{18} -$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} +$$
$$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2 - \omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_2^2\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} +$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} - \omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} +$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1v_2v_3^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_2^2v_3^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2\omega_{18} +$$
$$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2 +$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_3^2 +$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8v_1v_2v_3^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} +$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1v_2v_3^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_2^2v_3^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2\omega_{18} +$$
$$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2 +$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_3^2 +$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8v_1v_2v_3^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} -$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} +$$
$$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2^2\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} -$$
$$2\omega_6^2\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_2^2 - 4\omega_6^2\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} -$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_2^2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_3^2 - 4\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2 +$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} +$$
$$4\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} +$$
$$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} + 2\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} +$$
$$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_2^2v_3^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} +$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_3^2 - 4\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2 +$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_3^2\omega_{18} +$$
$$4\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} +$$
$$8\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_1v_2 -$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_1v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8^2v_1v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2v_2^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_2^2 - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_3^2 +$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} -$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2^2v_3^2\omega_{18} -$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2 -$$
$$2\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_2^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} - \omega_6^3\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} -$$
$$\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} -$$
$$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_2^2\omega_{18} - 8\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} -$$
$$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} -$$

$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1v_2v_3^2\omega_{18} +$
$\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_3^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_1v_2v_3^2\omega_{18} +$
$4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2 - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} + \omega_6^3\omega_{22}\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2 +$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2 + 4\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2 -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2 + \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_2^2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} +$
$\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_2^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_1v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_3^2\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} +$
$\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2v_1v_2v_3^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2 + \omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_2^2v_3^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} +$
$\omega_6^3\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_2^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{14}\omega_8^2v_1v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7c_s^2\omega_{11}\omega_{14}\omega_8^2v_2^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_2^2v_3^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_3^2\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2v_1v_2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{13}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_2^2)\frac{\rho}{2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2 - 2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_2^2v_3^2\omega_{18} -$
$2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_{18} - 4\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} +$
$4\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1v_2v_3^2\omega_{18} + 4\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} + 4\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1v_2v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} - 4\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2v_3^2 - 4\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2 + 2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} - 4\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} + 4\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1v_2\omega_{18} -$
$4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2 -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8v_1v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} + 4\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_1v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_2^2\omega_{18} +$
$4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1v_2v_3^2\omega_{18} - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_1v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_3^2 +$
$4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_1v_2v_3^2 + 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2 + 4\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_2^2\omega_{18} +$
$\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} - 2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2 + 4\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_1v_2\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_2^2v_3^2 + 4\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2 - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2 - 2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2 +$
$\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_2^2v_3^2 + 4\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2 - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2 - 2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}v_2^2v_3^2\omega_{18} +$
$\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_3^2\omega_{18} + 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2 + 4\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2 -$
$4\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} + 4\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2v_3^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_3^2\omega_{18} -$
$4\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2^2 - 4\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2 - 2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} -$
$4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1v_2v_3^2\omega_{18} + 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_2^2 - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2 + 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + 4\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2 - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} + 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}v_1v_2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2\omega_{18} -$
$4\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + 4\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2\omega_{18} + 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} -$
$4\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} +$

$4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}v_1v_2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} + 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1v_2\omega_{18} +$
$4\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2v_3^2 - 4\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2^2v_3^2 +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} - 2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2 - 4\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} + \omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} -$
$4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_1v_2v_3^2\omega_{18} - \omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1v_2v_3^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} + \omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} + 2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} +$
$4\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}v_1v_2\omega_{18} - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2 +$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18} +$
$4\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}v_1v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_2^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1v_2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_3^2\omega_{18} - 4\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} + 4\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} -$
$4\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_3^2\omega_{18} +$
$4\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2 - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18} - 2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2v_3^2\omega_{18} - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1v_2 + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2 -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_{18} + 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2\omega_{18} - 4\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2v_3^2 +$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} + 2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} - 4\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_2^2v_3^2\omega_{18} + \omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18} + 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2)\frac{\rho}{2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (-24\omega_3c_s^2\omega_1\omega_2^2 + 10\omega_3\omega_1^3\omega_2 - 22\omega_3\omega_1^2v_1^2\omega_2 + 4\omega_1^2v_2^2\omega_2^2 + 10\omega_3v_1^2\omega_2^3 - 20\omega_3\omega_1^2\omega_2^2 - 24\omega_3c_s^2\omega_1\omega_2^3 + 2\omega_1\omega_2^3 + 28\omega_3c_s^2\omega_1^3 +$
$12c_s^2\omega_1^2\omega_2^2 - 3\omega_3\omega_1v_2^2\omega_2^3 + 14\omega_3\omega_1^2\omega_2 + 26\omega_3c_s^2\omega_2^3 + 4\omega_3\omega_1^3v_2^2 - 6c_s^2\omega_1^3\omega_2 - 3\omega_3\omega_1^3v_2^2\omega_2 - 4\omega_3\omega_1v_2^2\omega_2^2 + 26\omega_3\omega_1^2v_1^2\omega_2^2 + 16\omega_3\omega_1^3v_1^2 -$
$6c_s^2\omega_1\omega_2^3 - 30\omega_3c_s^2\omega_1^2\omega_2 - 13\omega_3\omega_1v_1^2\omega_2^3 - 4\omega_3\omega_1v_1^2\omega_2^2 + 6\omega_3\omega_1^2v_2^2\omega_2^2 - 13\omega_3\omega_1^3v_1^2\omega_2 - 10\omega_3\omega_2^3 - 4\omega_3\omega_1^2v_2^2\omega_2 + 8\omega_3\omega_1\omega_2^2 - 24\omega_3c_s^2\omega_1^3\omega_2 +$
$2\omega_1^3\omega_2 - 2\omega_1^3v_2^2\omega_2 - 12\omega_3\omega_1^3 + 10\omega_3\omega_1\omega_2^3 + 48\omega_3c_s^2\omega_1^2\omega_2^2 + 4\omega_3v_2^2\omega_2^3 - 2\omega_1v_2^2\omega_2^3 - 4\omega_1^2\omega_2^2)\frac{\rho v_1v_2}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (84c_s^2\omega^2v_3^2 + 12\omega^3v_1v_2v_3^2 - 216c_s^2\omega v_1^2 + 12c_s^2\omega^3v_1v_2 - 6c_s^2\omega^3v_3^2 + 144c_s^2v_1^2 + 84\omega^2v_1^2v_3^2 + 432c_s^2\omega v_1v_2 - 36c_s^4 - 288v_1v_2v_3^2 -$
$168\omega^2v_1v_2v_3^2 - 216\omega v_1^2v_3^2 - 168c_s^2\omega^2v_1v_2 - 6c_s^2\omega^3v_1^2 + 144c_s^2v_3^2 + 54c_s^4\omega - 16c_s^4\omega^2 + 144v_1^2v_3^2 - 6\omega^3v_1^2v_3^2 - 288c_s^2v_1v_2 + 432\omega v_1v_2v_3^2 -$
$c_s^4\omega^3 - 216c_s^2\omega v_3^2 + 84c_s^2\omega^2v_1^2)\frac{\rho}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} +$
$12\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 24\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} - 60\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2 + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} - 6\omega_6^3\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2 + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2 - 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 - 24\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2 - 24\omega_6^3\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18} - 6\omega_6^3\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} -$
$60\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} - 6\omega_6^3\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$12\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2 - 6\omega_6^3\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18} + 18\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} -$
$24\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} - 24\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} -$
$6\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2 + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2 -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2 + 12\omega_6^3\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2 + 12\omega_6^2\omega_{22}\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} +$

$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2\omega_{18} -$
$18\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^3\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 6\omega_6^3\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_2\omega_{18} + 36\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2 + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2 -$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2v_3^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} - 18\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2 + 36\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2 +$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 6\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^3\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} +$
$42\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2 -$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2 - 6\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} -$
$24\omega_6^2\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2 + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} + 24\omega_6^2\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2 +$
$6\omega_6^3\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2 -$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2 - 6\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} -$
$24\omega_6^2\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2 + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} + 24\omega_6^2\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2 +$
$6\omega_6^3\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2 -$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 24\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 + 24\omega_6^2\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 24\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 + 24\omega_6^2\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 + 6\omega_6^3\omega_{22}\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18} + 10\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2 -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2 - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_3^2\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2 +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{14}\omega_8^2\omega_5 -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2 + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2 + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2 -$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2v_3^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} - 18\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2 -$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 + 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} + 24\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2 -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2 +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2v_3^2 + 12\omega_6^2\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2 -$
$6\omega_6^3\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} - 36\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8v_1^2\omega_5^2v_3^2\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5^2v_2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5^2v_2v_3^2\omega_{18} +$

$12\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{14}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_3^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1\omega_5^2v_2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1\omega_5^2v_2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_3^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2v_1^2\omega_5^2v_3^2\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3c_s^2\omega_{20}\omega_{14}\omega_8^2v_1^2\omega_5^2\omega_{18})\frac{\rho}{12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2 -$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 + 12\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2 +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_1^2\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5v_3^2 - 24\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2 +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} - 6\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2 +$
$12\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} +$
$24\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 - 24\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2 +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} + 24\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 6\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_1^2\omega_5v_3^2\omega_{18} +$
$6\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 12\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5v_3^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_{18} + 12\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2 + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}v_1\omega_5v_2\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_5\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1^2\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1^2\omega_5v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 6\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2 + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}v_1\omega_5v_2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2v_3^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_5v_3^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{11}\omega_{14}\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_5\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_3^2 + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2 -$
$12\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} + 10\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}v_1^2\omega_5\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}v_1\omega_5v_2\omega_{18} - 24\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2 +$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_5\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8 + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2 -$
$6\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{14}\omega_8\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5 + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_1\omega_5v_2v_3^2\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2 + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_1\omega_5v_2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2 + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1^2\omega_5 -$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5v_3^2 + 6\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2 - 18\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$12\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2 + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_5v_3^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5v_3^2\omega_{18} +$
$6\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 -$

$$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5v_2 + 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} +$$
$$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_3^2 - 12\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} -$$
$$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18} -$$
$$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2 +$$
$$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2\omega_{18} -$$
$$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_1\omega_5v_2v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} -$$
$$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_1\omega_5v_2\omega_{18} -$$
$$18\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}v_1^2\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18} -$$
$$\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} +$$
$$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5v_3^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} -$$
$$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_1\omega_5v_2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2 -$$
$$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2 + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8\omega_5 + 12\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5 +$$
$$12\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} -$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^4\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} -$$
$$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2 - 24\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2 +$$
$$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}v_1\omega_5v_2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2 - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18} -$$
$$24\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8\omega_5 + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 -$$
$$24\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2 + 12\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5v_3^2 - 6\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} +$$
$$12\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} -$$
$$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} -$$
$$6\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} - 24\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} +$$
$$6\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} -$$
$$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} -$$
$$18\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_5v_3^2\omega_{18} +$$
$$12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}v_1\omega_5v_2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_1^2\omega_5v_3^2\omega_{18} +$$
$$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2 + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{14}\omega_8v_1^2\omega_5\omega_{18} +$$
$$12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2 -$$
$$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2 +$$
$$24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} +$$
$$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1\omega_5v_2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{14}\omega_8\omega_5 - 6\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} -$$
$$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 - 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18} -$$
$$24\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5v_3^2\omega_{18} -$$
$$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1\omega_5v_2v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}v_1\omega_5v_2\omega_{18} +$$
$$24\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_1^2\omega_5v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$$
$$24\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1\omega_5v_2v_3^2 + 6\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_3^2\omega_{18})\frac{\rho}{12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (12\omega_3^2\omega_1\omega_2^2 + 24\omega_3^2\omega_{13}\omega_1\omega_2 - 12\omega_3^2\omega_1\omega_2^3 - 12\omega_1\omega_2^3 - 6\omega_3\omega_{13}\omega_2^3 + 12\omega_3^2\omega_2^3 - 2\omega_3^2\omega_{13}\omega_1\omega_2^2 - \omega_3^2\omega_{13}\omega_1\omega_2^3 - 12\omega_3^2\omega_2^2 +$$
$$12\omega_3^2\omega_{13}\omega_2 + 12\omega_3\omega_{13}\omega_1\omega_2 - 12\omega_3\omega_2^3 - 6\omega_3\omega_{13}\omega_1\omega_2^2 - 24\omega_3^2\omega_{13}\omega_1 - 12\omega_3\omega_1\omega_2^2 - 6\omega_3^2\omega_{13}\omega_2^2 + 24\omega_3\omega_1\omega_2^3 + 12\omega_{13}\omega_2^3 - 2\omega_3^2\omega_{13}\omega_2^3)\frac{c_s^4\rho}{12\omega_3^2\omega_{13}\omega_1\omega_2^3}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2 - 216\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3 + 108\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 -$$
$$72\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5v_2^2\omega_2 + 24\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2 + 36\omega_3^2\omega_4\omega_1v_1^4\omega_5\omega_2^3 - 108\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1v_1^4\omega_5\omega_2^2 +$$
$$72\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2v_1^2\omega_5\omega_2^3 + 132\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^2 + 112\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5 - 54\omega_3^2\omega_1^3v_1^4\omega_5\omega_2^3 -$$
$$36\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2 + 36\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 - 12\omega_3\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 - 108\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_5\omega_2^3 - 72\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 + 288\omega_3^2\omega_4c_s^2\omega_1\omega_5\omega_2^3 +$$
$$72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 - 9\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^3v_3^2 - 162\omega_3^2\omega_4c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 - 162\omega_3^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 + 264\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5 +$$
$$64\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2 - 6\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 - 216\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 + 54\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 + 108\omega_3^2\omega_4^2\omega_1v_1^4\omega_5\omega_2^3 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 -$$
$$108\omega_3^2\omega_1^2v_1^2\omega_5\omega_2^3 - 108\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 - 108\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1v_1^2\omega_5v_2^2\omega_2^2 - 36\omega_3^2\omega_4\omega_1v_1^2\omega_5\omega_2^3 + 240\omega_3^2\omega_4^2c_s^2\omega_5v_2^2\omega_2^3 -$$
$$4\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 + 108\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 - 96\omega_3^2\omega_4^2v_1^4\omega_5\omega_2^3 + 54\omega_3^2\omega_1^3v_1^2\omega_5\omega_2^3 + 36\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 72\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^2 +$$
$$72\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 - 72\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 - 2\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^2 + 12\omega_3\omega_4^2\omega_1v_1^4\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 +$$
$$648\omega_3^2\omega_4c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 + 324\omega_3^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2 - 96\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2 - 180\omega_3^2\omega_4^2\omega_1v_1^2\omega_5v_2^2\omega_2^3 +$$
$$9\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^2 + 27\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 + 162\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 + 336\omega_3\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^3 + 180\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 + 288\omega_3^2\omega_4c_s^4\omega_1^2\omega_5\omega_2^3 +$$
$$2\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^2 - 6\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 + 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 + 300\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^3 +$$
$$288\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 + 360\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5v_2^2\omega_2^2 + 108\omega_3^2\omega_1^2v_1^4\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 160\omega_3\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 - 54\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 + 72\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 +$$
$$8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 216\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 - 36\omega_3\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 32\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5 - 36\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^4 + 64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2 +$$
$$24\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^2 - 168\omega_3^2\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^2 + 72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^2 - 216\omega_3^2\omega_4^2c_s^2v_1^2\omega_5\omega_2^3 -$$
$$72\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2 - 144\omega_3^2\omega_4\omega_1^2v_1^4\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 112\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 + 162\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 - 288\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 -$$
$$18\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 60\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 - 120\omega_3^2\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^3 - 288\omega_3^2\omega_4c_s^4\omega_1\omega_5\omega_2^3 - 72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 -$$
$$18\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 - 12\omega_3\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 - 108\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_5\omega_2^2 + 152\omega_3^2\omega_4^2c_s^4\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 - 54\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 + 180\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^3 -$$
$$36\omega_3\omega_4\omega_1^3v_1^4\omega_5\omega_2^2 - 180\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 + 216\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5v_2^2 - 28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5 -$$
$$9\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^4 + 24\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 - 36\omega_3\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 36\omega_3^2\omega_4\omega_1^2v_1^4\omega_5\omega_2^2 - 56\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^2 + 216\omega_3^2\omega_4^2v_1^2\omega_5v_2^2\omega_2^3 -$$

$8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 24\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^4 - 54\omega_3^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 + 36\omega_3\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 + 48\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5 -$
$648\omega_3^2\omega_4c_s^2\omega_1\omega_5v_2^2\omega_2^3 - 72\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 108\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 + 4\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 - 27\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3v_2^3 - 24\omega_3^2\omega_4^2\omega_5v_2^2\omega_2^3 -$
$84\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 48\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^2 + 16\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 - 180\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5v_2^2\omega_2 + 144\omega_3^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 - 348\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2 +$
$132\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3v_1^4\omega_5\omega_2^2 - 72\omega_3^2\omega_4c_s^4\omega_1^3\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2 + 264\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 -$
$60\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 9\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^3v_3^4 - 288\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 + 108\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 +$
$54\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 - 6\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3 - 88\omega_3^2\omega_4^2c_s^2\omega_5\omega_2^3 + 12\omega_3\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^2 + 36\omega_3\omega_4\omega_1^2v_1^4\omega_5\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2 - 468\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 +$
$160\omega_3\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_1^2\omega_5\omega_2^2 + 54\omega_3^2\omega_4\omega_1^3v_1^4\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2 - 72\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^2)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (\omega^3v_1v_2^2 - 24c_s^2v_1 - 24v_1v_2^2 + 14\omega^2v_1^2v_2 - c_s^2\omega^3v_2 + 36\omega v_1v_2^2 + 36c_s^2\omega v_1 + 14c_s^2\omega^2v_2 - 36c_s^2\omega v_2 - 14c_s^2\omega^2v_1 - \omega^3v_1^2v_2 -$
$14\omega^2v_1v_2^2 + 24v_1^2v_2 + 24c_s^2v_2 + c_s^2\omega^3v_1 - 36\omega v_1^2v_2)\frac{\rho v_3}{\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-4\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 +$
$8\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18} - 2\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_2\omega_{18}^2 -$
$12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5v_2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_1^2\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}^2 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_2\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18} - 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2 + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5v_2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8v_1\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_2\omega_{18}^2 + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5v_2\omega_{18}^2 -$
$\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}^2\omega_{14}\omega_8v_1\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}^2 -$
$2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 + 9\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5v_2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18} + 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18} -$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_2\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 8\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18} +$
$2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 - 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 -$
$8\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8v_1\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 - 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18} -$
$8\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_1\omega_5v_2^2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_2\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18} + 6\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5v_2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_2\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8v_1\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_2\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8v_1^2\omega_5v_2\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_2\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_2\omega_{18}^2 -$
$4\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18} - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18} - 4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8v_1^2\omega_5v_2\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 -$
$8\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8v_1\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_1\omega_5v_2^2\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 + 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8v_2\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 - 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18} -$

$14\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5v_2\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 - 4\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8v_1\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_2\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 8\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_2\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_1^2\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5v_2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_2\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2 +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8v_2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8v_1\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 - 2\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_2\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5v_2\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8v_1\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18} +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5v_2\omega_{18} +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2v_1^2\omega_5v_2^2\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2^2\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2v_1\omega_5v_2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2c_s^2\omega_{20}\omega_{14}\omega_8^2\omega_5v_2\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8v_1\omega_5v_2^2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5v_2\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8v_1\omega_5v_2^2\omega_{18}^2)\frac{\rho v_3}{2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (\omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_1v_2^2 + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2 - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}v_1^2v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}v_1^2v_2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_1\omega_{18} + \omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18} -$
$\omega_6\omega_{22}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2v_2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2 + 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2 - \omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - \omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18} -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2v_2 + 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}v_1v_2^2\omega_{18} - \omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 - 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2 - 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_2 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}v_1v_2^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2 + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2 + \omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} +$
$2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2v_2 + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{14}\omega_8v_2\omega_{18} +$
$\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_1\omega_{18} +$
$\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_1\omega_{18} + 2\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2 + 2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2v_2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2^2 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2 - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}v_1\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1^2v_2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1^2v_2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{14}\omega_8v_1v_2^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8v_2\omega_{18} + \omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1v_2^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_1\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18} - 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2 -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_1^2v_2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1^2v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2 -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_1v_2^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} - \omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2v_2\omega_{18} + \omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2^2 - \omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2\omega_{18} + 2\omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 - 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1^2v_2 -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_1v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2v_2 + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}v_2\omega_{18} +$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2v_2 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - \omega_6\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}\omega_8v_1^2v_2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{14}\omega_8v_1 - \omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}\omega_8v_1^2v_2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_1^2v_2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{11}\omega_{14}\omega_8v_1\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2\omega_{18} + 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2 +$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_{18} + 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2 +$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} + 2\omega_{22}\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8v_2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2v_2\omega_{18} -$

$2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{11}\omega_{14}\omega_8 v_1 + \omega_6\omega_{22}\omega_{19}\omega_{13}c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1 v_2^2 -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8 v_1^2 v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_2\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1 v_2^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{14}\omega_8 v_1\omega_{18} + 2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1^2 v_2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 v_1^2 v_2\omega_{18} +$
$\omega_6\omega_{22}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14} v_1\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1\omega_{18} +$
$2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1 v_2^2\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{13}\omega_7 c_s^2\omega_{20}\omega_{14}\omega_8 v_1)\frac{\rho v_3}{\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (9\omega_3\omega_1 v_2^2\omega_2 - 9\omega_4\omega_1 v_2^2\omega_2 - 6\omega_3\omega_4 c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4 c_s^2\omega_1 - 27\omega_4 c_s^2\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 2\omega_3\omega_4 v_2^2\omega_2 -$
$9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 2\omega_3\omega_4\omega_1 v_2^2)\frac{\rho v_2 v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (-36\omega v_1 v_2^2 v_3^2 - 36c_s^2\omega v_1 v_3^2 - 36c_s^2\omega v_1 v_2^2 - 24c_s^2 v_1^2 v_3 - 14\omega^2 v_1^2 v_2^2 v_3 - 24v_1^2 v_2^2 v_3 + c_s^2\omega^3 v_2^2 v_3 + \omega^3 v_1^2 v_2^2 v_3 - 14c_s^2\omega^2 v_1^2 v_3 +$
$36c_s^2\omega v_2^2 v_3 - c_s^2\omega^3 v_1 v_2^2 - c_s^2\omega^3 v_1 v_3^2 + 24c_s^2 v_1 v_3^2 + 24c_s^2 v_1 v_2^2 + 24v_1 v_2^2 v_3^2 + 14\omega^2 v_1 v_2^2 v_3^2 - 14c_s^2\omega^2 v_2^2 v_3 + 36c_s^2\omega v_1^2 v_3 + 36\omega v_1^2 v_2^2 v_3 +$
$14c_s^2\omega^2 v_1 v_3^2 - 24c_s^2 v_2^2 v_3 + 14c_s^2\omega^2 v_1 v_2^2 + c_s^2\omega^3 v_1^2 v_3 - \omega^3 v_1 v_2^2 v_3^2)\frac{1}{2\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (2\omega_6^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3 +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1^2 v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} + 4\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_2^2 v_3 -$
$2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} +$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} + \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2 + 2\omega_6^2\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1 v_2^2\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} + \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11} v_1\omega_{18} +$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 - 2\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1 v_2^2\omega_{18} -$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2 - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6^2\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2\omega_{18} - \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} + \omega_6^2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1 v_3^2\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3 + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1 v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3^2\omega_{18} +$
$2\omega_6^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} -$
$2\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_2^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} + \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} +$
$\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} +$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2 v_3 - \omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} + \omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 -$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1 v_2^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3 + \omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2 - \omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2 - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} -$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} + \omega_6^2\omega_{19}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 +$

$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2 - \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_2^2 v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} -$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} - 4\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} - \omega_6^2\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1 v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3 -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} + 4\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11} v_1\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} - 8\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_{18} +$
$2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} - \omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1 v_3^2\omega_{18} -$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} - \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_2^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1^2 v_3^2\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} + \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_2^2 v_3\omega_{18} - \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3 + \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} +$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_{18} - 4\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11} v_1\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} - 8\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1\omega_{18} +$
$2\omega_6^2\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3 - 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} -$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1 v_3^2 + \omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} +$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1^2 v_3\omega_{18} + \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3 - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} +$
$2\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} - 4\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} -$
$8\omega_6^2\omega_{19}\omega_{16}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_{18} - \omega_6^2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} -$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1 v_2^2 + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} -$
$2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} - \omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} +$
$2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2\omega_{18} + 2\omega_6^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1 v_2^2\omega_{18} - \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2\omega_{18} +$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2 - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_2^2 v_3\omega_{18} +$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1 v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 - \omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} + \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_2^2 v_3 -$
$\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} - \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2 v_1 v_2^2 v_3^2 + 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1 v_2^2\omega_{18} -$
$2\omega_6^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_3^2 + 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} +$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1 v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 - \omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2 v_2^2 v_3\omega_{18} + \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_2^2 v_3 -$
$\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2 v_1^2 v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} - \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1 v_2^2 v_3^2\omega_{18} - 4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2 v_1^2 v_3\omega_{18})\frac{1}{2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3 + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} -$
$\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3 - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} +$
$2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11} v_1^2 v_3\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2 v_3 + 2\omega_6\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11} v_1 v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2 + 2\omega_6\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_3^2\omega_{18} - 2\omega_6\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} -$
$2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} - 2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11} v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} -$

$\omega_6\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_3^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2 -$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11} v_1 v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11} v_1^2 v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} -$
$2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1^2 v_3 - \omega_6\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11} v_1 v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} -$
$2\omega_6\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2 v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - \omega_6\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 -$
$2\omega_6\omega_{19}\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - \omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} - 2\omega_6\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} v_1^2 v_2^2 v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 v_1 v_2^2 v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11} v_1 v_2^2 v_3^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2 v_3\omega_{18} +$
$\omega_6\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 v_1^2 v_2^2 v_3 + 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 v_2^2 v_3 -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11} v_1 v_3^2\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_6\omega_{19} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2 - 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1^2 v_2^2 v_3 +$
$2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} v_1^2 v_2^2 v_3\omega_{18} -$
$2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11} v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} + 2\omega_6\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} -$
$\omega_6\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11} v_1^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} -$
$2\omega_6\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11} v_1 v_2^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 v_1 v_3^2\omega_{18} - \omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_6\omega_{16} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1^2 v_3 +$
$\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11} v_1^2 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8 v_1^2 v_2^2 v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11} v_1 v_2^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} v_1 v_2^2 v_3^2\omega_{18} +$
$\omega_6\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} +$
$2\omega_6\omega_{16} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11} v_1^2 v_3\omega_{18} +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2 + 2\omega_6\omega_{19}\omega_{16} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 v_1 v_3^2\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{17}\omega_{11} v_1 v_3^2\omega_{18} + 2\omega_6\omega_{16} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 v_1^2 v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 v_1 v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{17}\omega_{11} v_1 v_2^2\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3 + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11} v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 v_1 v_3^2 +$
$2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11} v_1 v_3^2\omega_{18} + 2\omega_6\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11} v_2^2 v_3\omega_{18} - \omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11} v_1 v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{17}\omega_{11} v_1^2 v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 v_1^2 v_3\omega_{18} - 2\omega_6\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_8 v_1 v_2^2 - 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} - 2\omega_6\omega_{16}\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11} v_1^2 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_2^2 - 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{11} v_1^2 v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 v_1 v_2^2 v_3^2\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} +$
$\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1 v_2^2 v_3^2 +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11} v_1 v_3^2\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_2^2 v_3 +$
$2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11} v_2^2 v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_3^2\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} +$
$2\omega_6\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_3^2 - 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} +$
$2\omega_6\omega_{19} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 + \omega_6\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 v_1 v_2^2 v_3^2 - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2 v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} v_1^2 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{11} v_1 v_2^2\omega_{18} -$
$\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2 + 2\omega_6\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8 v_1 v_2^2 v_3^2\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 - \omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} -$
$2\omega_6\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_3^2 + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11} v_1^2 v_2^2 v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11} v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_6\omega_{19} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} - \omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3 +$
$2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1^2 v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3 - 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} -$
$2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{11} v_1 v_3^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11} v_1^2 v_3\omega_{18} -$
$2\omega_6\omega_{19}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3 +$
$2\omega_6\omega_{19} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} - 2\omega_6\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} -$
$\omega_6\omega_{19}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2 -$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} v_1 v_2^2 v_3^2\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11} v_1 v_2^2 v_3^2\omega_{18} -$
$2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11} v_1^2 v_2^2 v_3\omega_{18} +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11} v_1 v_2^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} + 2\omega_6\omega_{16}\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11} v_1 v_2^2 v_3^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11} v_1^2 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3 +$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11} v_1^2 v_2^2 v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 - 2\omega_6\omega_{19}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{23} c_s^2\omega_{20}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2\omega_{18} +$
$\omega_6\omega_{19}\omega_7 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11} v_1 v_3^2\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11} v_2^2 v_3\omega_{18} +$
$\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3 + 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_2^2 v_3 +$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1 v_2^2 v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{11} v_1 v_3^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_2^2 v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{20}\omega_{17}\omega_{11} v_2^2 v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23} c_s^2\omega_{17}\omega_{11}\omega_8 v_1 v_3^2\omega_{18} +$

$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_2^2v_3\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3^2 + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_2^2v_3\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_2^2v_3\omega_{18} - 2\omega_6\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_{18} -$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1v_2^2v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}v_2^2v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2v_3 - 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_2^2v_3\omega_{18} +$
$\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1^2v_3\omega_{18} - 2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_1v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2v_2^2v_3\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_2^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_2^2\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_1v_2^2v_3^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1v_2^2\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_2^2v_3\omega_{18} + 2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_2^2\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2v_2^2v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1^2v_3 + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_1^2v_3\omega_{18})\frac{1}{2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (-252\omega_4^2c_s^4\omega_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 - 432\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 32\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 + 8\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 -$
$432\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 - 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 30\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 81\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 176\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 108\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 +$
$32\omega_3^2\omega_4^2c_s^2v_1^2\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3v_2^2 - 54\omega_4^2c_s^2\omega_1^3\omega_2^3 - 432\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 - 104\omega_3^2\omega_4^2c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 64\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 -$
$10\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2 + 72\omega_3^2\omega_4^2v_1^2v_2^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 24\omega_4^2c_s^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2v_2^4\omega_2^3 + 112\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 +$
$10\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 104\omega_3^2\omega_4^2c_s^2\omega_1^3 - 192\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 108\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 - 60\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^3 + 84\omega_4^2c_s^2\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 -$
$10\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 + 324\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 24\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 - 54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 - 24\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 -$
$108\omega_3^2c_s^2\omega_1^2\omega_2^3 + 192\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 27\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 162\omega_4^2c_s^4\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2v_1^2\omega_2^3 + 432\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 + 80\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 54\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 +$
$192\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1v_1^2v_2^2\omega_2^2 + 64\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 - 72\omega_4^2c_s^4\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2 - 30\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 -$
$8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 168\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_2^3 + 144\omega_3^2\omega_4^2c_s^4\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 24\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2 - 16\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 -$
$56\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 - 96\omega_3^2\omega_4^2v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 27\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2^3 + 108\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 -$
$8\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 - 168\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 216\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 432\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 81\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 + 32\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 +$
$10\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 + 864\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 56\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 - 84\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^3 + 432\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 +$
$64\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 - 324\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3 + 72\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 + 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 60\omega_3^2\omega_4^2\omega_1^3v_1^2v_2^2\omega_2 + 8\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 -$
$27\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^3 + 128\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 120\omega_3^2\omega_4^2\omega_1^2v_1^2v_2^2\omega_2^2 + 108\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1^3v_1^2 - 27\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3)\frac{v_1}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} =$
$(12c_s^2\omega^3v_1v_3 + 84c_s^2\omega^2v_3^2 + 84c_s^2\omega^2v_2^2 + 144v_2^2v_3^2 - 6\omega^3v_2^2v_3^2 - 6c_s^2\omega^3v_2^2 - 216\omega v_2^2v_3^2 - 6c_s^2\omega^3v_3^2 - 36c_s^4 + 432\omega v_1v_2^2v_3 + 432c_s^2\omega v_1v_3 + 12\omega^3v_1v_2^2v_3 +$
$84\omega^2v_2^2v_3^2 + 144c_s^2v_3^2 + 144c_s^2v_2^2 + 54c_s^4\omega - 168c_s^2\omega^2v_1v_3 - 16c_s^4\omega^2 - 288v_1v_2^2v_3 - c_s^4\omega^3 - 168\omega^2v_1v_2^2v_3 - 216c_s^2\omega v_3^2 - 216c_s^2\omega v_2^2 - 288c_s^2v_1v_3)\frac{\rho}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18} - 24\omega_6^3\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_3 -$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} - 6\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} - 60\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_3^2\omega_{18} - 12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3 + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2 + 12\omega_6^3\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} - 12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2 + 432\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{18} - 12\omega_6^3\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} + 6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2v_3^2\omega_{18} -$
$24\omega_6^3\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} + 12\omega_6^3\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} +$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2v_2^2v_3\omega_{18} - 6\omega_6^3\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_3^2 -$
$24\omega_6^3\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} - 18\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} - 12\omega_6^3\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2v_3^2\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_3^2\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 - 12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2v_2^2\omega_{18} - 12\omega_6^3\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} +$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2 - 18\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18} + 6\omega_6^3\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18} - 12\omega_6^3\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} +$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3 + 12\omega_6^3\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5^2v_3\omega_{18} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3\omega_{18} + 12\omega_6^3\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3\omega_{18} -$
$12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5^2v_3\omega_{18} -$
$24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} -$

$48\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18} + 6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2 + 12\omega_6^3\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} -$
$\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3 -$
$12\omega_6^3\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} + 12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_5^2v_3\omega_{18} - 18\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3^2\omega_{18} - 24\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18} +$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3 + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3 +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} - 24\omega_6^3\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} + 6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} + 36\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18} -$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3 + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5 - 12\omega_6^3\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_3^2 - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} - 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_3\omega_{18} +$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18} + 12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} - 18\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} + 12\omega_6^3\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2 +$
$12\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} + 24\omega_6^3\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} + 42\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{18} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} -$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2 -$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} + 12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{18} - 24\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} -$
$6\omega_6^3\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} - 12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} - 2\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8^2\omega_5^2 - 24\omega_6^3\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} - 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3 +$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2 - 24\omega_6^3\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} +$
$12\omega_6^3\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2v_3^2\omega_{18} + 36\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} +$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} +$
$24\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} + 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} +$
$24\omega_6^3\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5^2v_2^2v_3\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18} - 6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3^2 - 24\omega_6^3\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} +$
$12\omega_6^3\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 - 24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3 -$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} - 24\omega_6^3\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} - 36\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2\omega_{18} + 6\omega_6^3\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3 +$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2\omega_5^2v_2^2 + 12\omega_6^3\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} -$
$12\omega_6^3\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2v_2^2v_3^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5^2v_3\omega_{18} +$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2v_3^2\omega_{18} - 6\omega_6^3\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} +$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2v_2^2v_3\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_3^2 - 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} -$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} +$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2\omega_{18} - 6\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3 + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2v_3^2\omega_{18} + 24\omega_6^3\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18} +$
$10\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_3^2 - 12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18} -$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2 - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2 + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2v_2^2\omega_{18} -$

$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18}+12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}-12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18}-$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_2^2v_3^2-24\omega_6^3\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_5^2v_3\omega_{18}-24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_3^2\omega_{18}+$
$12\omega_6^3\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18}-12\omega_6\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18}-24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3-$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18}+24\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5^2v_3\omega_{18}+6\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2v_3^2\omega_{18}-$
$12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}+12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18}-6\omega_6^3\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18}+$
$24\omega_6^3\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18}+12\omega_6^3\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5v_3^2\omega_{18}+6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}-$
$6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2+6\omega_6^3\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_3^2\omega_{18}-60\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2v_3^2\omega_{18}+$
$6\omega_6^3\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}+24\omega_6^3\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_2^2v_3\omega_{18}-12\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}-$
$24\omega_6^3\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5^2v_3\omega_{18}-12\omega_6^3\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2v_3^2\omega_{18}+$
$6\omega_6^3\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2v_2^2\omega_{18})\frac{\rho}{12\omega_6^3\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}=C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}=(-12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18}+6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}+24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18}+$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{18}-12\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}+12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18}+$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3-24\omega_6^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18}-6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18}+$
$12\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{18}-18\omega_6\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}-12\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}-$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18}-6\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_2^2\omega_{18}-24\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18}+$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_1\omega_5v_2^2v_3\omega_{18}+12\omega_6^2\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}-12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8\omega_{18}-$
$24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}v_1\omega_5v_3\omega_{18}-12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_5\omega_{18}+12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_5v_2^2\omega_{18}+$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5v_3^2\omega_{18}-6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}+24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3-$
$24\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18}+6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}-12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18}+$
$12\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}-12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5v_2^2v_3^2\omega_{18}-6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18}-$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3-12\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}-24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18}-$
$24\omega_6^2\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18}+6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_2^2\omega_{18}-24\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18}-$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{18}-18\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}-12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_5\omega_{18}-$
$12\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18}-24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18}-$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}v_1\omega_5v_3\omega_{18}+6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18}-12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18}+$
$12\omega_6\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}-24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3-$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}v_1\omega_5v_3\omega_{18}+12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3^2\omega_{18}-12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18}+$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18}+6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_2^2\omega_{18}-24\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18}-$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{18}-18\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}-12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_5\omega_{18}-$
$12\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18}-12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3+12\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}-$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}v_1\omega_5v_3\omega_{18}+12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_5v_2^2v_3^2\omega_{18}-12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_2^2+$
$12\omega_6^2\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18}+12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18}+12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_5v_3^2\omega_{18}+$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5v_2^2\omega_{18}-12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3-6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18}-$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8-12\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18}+12\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3^2\omega_{18}-$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18}-24\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18}-12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18}-$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18}-12\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18}+12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_5v_2^2v_3^2-$
$24\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18}-12\omega_6^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18}-12\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{18}+$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_3^2+12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_5\omega_{18}+12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_5v_2^2\omega_{18}+$

$24\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{18} + 12\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18} +$
$24\omega_6^2\omega_{19}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18} - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5v_2^2v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} -$
$12\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18} - 24\omega_6^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} - 12\omega_6^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} - 24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3 -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5v_2^2\omega_{18} - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} - 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} +$
$12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_2^2 + 24\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_2^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_2^2 -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3 + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}v_1\omega_5v_3\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} + 24\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} - 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2 -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8\omega_5v_2^2\omega_{18} + 6\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_5v_3\omega_{18} -$
$6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2 - 12\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5v_2^2v_3^2\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5 - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_5v_3^2\omega_{18} - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18} - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18} +$
$12\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} - 24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_1\omega_5v_2^2v_3\omega_{18} + 24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} -$
$6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2 - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8\omega_5 - 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1\omega_5v_3\omega_{18} -$
$12\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5v_2^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_1\omega_5v_2^2v_3\omega_{18} + 12\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} -$
$12\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{18} - 24\omega_6^2\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3\omega_{18} + 24\omega_6^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18} + 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2 + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_8 + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_5v_2^2v_3^2\omega_{18} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1\omega_5v_3\omega_{18} - 12\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{18} + 12\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} -$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}v_1\omega_5v_3\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2 +$
$12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18} + 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18} - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_3^2\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_5v_2^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18} + 24\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18} - \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_1\omega_5v_2^2v_3\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18} - 12\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} + 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2 +$
$12\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 6\omega_6^2\omega_{19}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2 +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_5v_3^2\omega_{18} + 12\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5v_2^2v_3^2\omega_{18} - 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} + 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3 +$
$12\omega_6^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} + 24\omega_6^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_5v_2^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5v_2^2v_3^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8\omega_5 + 24\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} + 12\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5v_2^2v_3^2\omega_{18} -$
$12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_2^2v_3 + 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8\omega_5v_2^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5v_2^2v_3\omega_{18} + 6\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2v_3^2\omega_{18} + 12\omega_6\omega_{19}\omega_7^2\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3 - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_5v_3^2\omega_{18} + 12\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8\omega_5v_3^2\omega_{18} + 10\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 24\omega_6^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_5v_3\omega_{18} -$
$24\omega_6^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} + 24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_5v_2^2v_3\omega_{18} + 12\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5v_2^2\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} - 24\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}v_1\omega_5v_3\omega_{18})\frac{\rho}{12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (12\omega_3^2\omega_1\omega_2^2 + 12\omega_3\omega_{13}\omega_2^2 - 6\omega_3^3\omega_{13}\omega_2 + 12\omega_3^3\omega_2^2 - 6\omega_3^2\omega_{13}\omega_1\omega_2 - \omega_3^3\omega_{13}\omega_1\omega_2^2 - 12\omega_3^3\omega_1 + 12\omega_3^3\omega_{13} - 12\omega_3^3\omega_2 - 2\omega_3^2\omega_{13}\omega_1\omega_2^2 -$
$24\omega_{13}\omega_1\omega_2^2 - 2\omega_3^3\omega_{13}\omega_2^2 - 12\omega_3^2\omega_1\omega_2 - 12\omega_3^2\omega_2^2 + 12\omega_3\omega_{13}\omega_1\omega_2 - 12\omega_3^3\omega_1\omega_2^2 + 24\omega_3^3\omega_1\omega_2 + 24\omega_3\omega_{13}\omega_1\omega_2^2 - 6\omega_3^2\omega_{13}\omega_2^2)\frac{c_s^4\rho}{12\omega_3^3\omega_{13}\omega_1\omega_2^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (108\omega_3^2\omega_4^2\omega_1\omega_5v_2^4\omega_2^3 - 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3 + 54\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^3 + 264\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^4 -$
$8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 + 144\omega_3^2\omega_4\omega_1^2\omega_5v_2^2\omega_2^2 - 72\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5v_2^2\omega_2 + 132\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2 - 348\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2 - 24\omega_3^2\omega_4^2v_1^2\omega_5\omega_2^2 +$
$48\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 - 84\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^2 + 112\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 + 48\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2 + 36\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 - 648\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_5\omega_2^3 +$
$108\omega_3^2\omega_4c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 - 72\omega_3\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^2 - 72\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2\omega_5v_2^2\omega_2^2 + 288\omega_3^2\omega_4c_s^2\omega_1\omega_5\omega_2^3 - 36\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^2 - 54\omega_3^2\omega_1^3\omega_5v_2^4\omega_2^3 +$
$72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 - 468\omega_3\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1\omega_5v_2^4\omega_2^2 + 36\omega_3\omega_4\omega_1^3\omega_5v_2^2\omega_2^2 - 9\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^3v_3^2 + 54\omega_3\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^3 +$
$108\omega_3^2\omega_4c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1\omega_5v_2^4\omega_2^3 + 24\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5 + 64\omega_3^2\omega_4^2c_s^2\omega_1\omega_5\omega_2^2 + 18\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^2\omega_3^3 - 60\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 -$
$216\omega_3\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 + 108\omega_3^2\omega_1^2\omega_5v_2^4\omega_2^3 + 162\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3\omega_5v_2^2\omega_2^2 - 288\omega_3^2\omega_4^2\omega_1v_1^2\omega_5v_2^2\omega_2^2 -$
$216\omega_3^2\omega_4^2c_s^2\omega_5v_2^2\omega_2^3 - 4\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2 + 72\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3 - 168\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^2v_3^2 -$
$2\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^2 + 264\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2 - 36\omega_3\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^3 - 216\omega_3^2\omega_4c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^3 -$
$24\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2 + 12\omega_3\omega_4^2\omega_1\omega_5v_2^4\omega_2^3 - 180\omega_3^2\omega_4^2\omega_1v_1^2\omega_5v_2^2\omega_2^3 - 54\omega_3^2\omega_4\omega_1^3\omega_5v_2^2\omega_2^3 + 9\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^2 + 27\omega_3^2\omega_4c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 -$
$72\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^3 + 180\omega_3\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^3 - 180\omega_3\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 + 24\omega_3\omega_4^2\omega_1^3\omega_5v_2^2\omega_2 - 96\omega_3^2\omega_4^2\omega_5v_2^4\omega_2^3 + 288\omega_3^2\omega_4c_s^4\omega_1^2\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^2 -$
$6\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3v_3^2 - 36\omega_3\omega_4\omega_1^2\omega_5v_2^2\omega_2^3 - 108\omega_3^2\omega_4c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 - 12\omega_3\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^2 + 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_5\omega_2^2 + 60\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 -$
$18\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 - 120\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^3 + 288\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 + 360\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5v_2^2\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 -$
$160\omega_3\omega_4^2c_s^2\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 36\omega_3^2\omega_4\omega_1^2\omega_5v_2^4\omega_2^2 + 648\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 + 32\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5 + 324\omega_3^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2v_3^4 +$
$64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2 + 54\omega_3^2\omega_1^3\omega_5v_2^2\omega_2^3 + 36\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^2 + 72\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^2 - 24\omega_3^2\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^2 - 36\omega_3\omega_4\omega_1^3\omega_5v_2^4\omega_2^2 + 72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3 +$

$8\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 - 54\omega_3\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^3 - 36\omega_3^2\omega_4\omega_1\omega_5v_2^2\omega_2^3 + 240\omega_3^2\omega_4^2c_s^2v_1^2\omega_5\omega_2^3 + 108\omega_3\omega_4c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 - 18\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 -$
$108\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 - 112\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 - 108\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 - 288\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 + 6\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^2 + 300\omega_3^2\omega_4^2c_s^2\omega_1\omega_5v_2^2\omega_2^3 -$
$48\omega_3^2\omega_4^2\omega_1\omega_5v_2^2\omega_2^3 - 288\omega_3^2\omega_4c_s^4\omega_1\omega_5\omega_2^3 - 72\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 - 54\omega_4^2\omega_1^3\omega_5v_2^2\omega_2^3 - 144\omega_3^2\omega_4\omega_1^2\omega_5v_2^4\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2\omega_2 + 152\omega_3^2\omega_4^2c_s^4\omega_5\omega_2^3 +$
$8\omega_3^2\omega_4^2\omega_5\omega_2^3 + 162\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 + 336\omega_3\omega_4^2c_s^2\omega_1v_1^2\omega_5\omega_2^3 + 180\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 + 216\omega_3\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5v_2^2 -$
$28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 - 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5 - 9\omega_3\omega_4^2\omega_1^3\omega_5\omega_2^3v_3^4 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^2 - 56\omega_3^2\omega_4^2c_s^4\omega_1\omega_5\omega_2^2 + 216\omega_3^2\omega_4^2v_1^2\omega_5v_2^2\omega_2^3 -$
$8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 96\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3v_3^4 + 72\omega_3\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^3\omega_5v_2^2\omega_2 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_5 -$
$108\omega_3^2\omega_4c_s^2\omega_1\omega_5v_2^2\omega_2^2 - 12\omega_3\omega_4^2\omega_1\omega_5v_2^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2\omega_5v_2^4\omega_2 + 54\omega_3^2\omega_4\omega_1^3\omega_5v_2^4\omega_2^3 + 4\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^2 - 27\omega_3\omega_4^2c_s^2\omega_1^3\omega_5\omega_2^3v_3^2 +$
$72\omega_4^2\omega_1^2\omega_5v_2^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_5v_2^2\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3\omega_5v_2^4\omega_2 + 36\omega_3\omega_4\omega_1^2\omega_5v_2^4\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 132\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^2 + 16\omega_3\omega_4^2c_s^4\omega_1^3\omega_5\omega_2 -$
$180\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5v_2^2\omega_2 + 12\omega_3\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^2 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_5\omega_2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 - 108\omega_3\omega_4c_s^2\omega_1^3\omega_5v_2^2\omega_2^2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^3 -$
$72\omega_3^2\omega_4c_s^4\omega_1^3\omega_5\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^2 + 18\omega_3^2\omega_4^2\omega_1^3\omega_5v_2^4\omega_2^2 - 216\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 + 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^2 - 6\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 +$
$9\omega_3^2\omega_4\omega_1^3\omega_5\omega_2^3v_3^4 - 288\omega_3^2\omega_4c_s^2\omega_1^2\omega_5\omega_2^3 - 108\omega_3^2\omega_1^2\omega_5v_2^2\omega_2^3 - 162\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 + 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3\omega_5v_2^4\omega_2^2 - 162\omega_3^2c_s^2\omega_1^3\omega_5v_2^2\omega_2^3 -$
$6\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_5\omega_2^3 - 88\omega_3^2\omega_4^2c_s^2\omega_5\omega_2^3 - 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_5v_2^2\omega_2^3 + 160\omega_3\omega_4^2c_s^4\omega_1\omega_5\omega_2^3 - 72\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3\omega_4^2\omega_1^2\omega_5v_2^4\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (-\omega^3v_1v_3^2 + c_s^2\omega^3v_3 - 14\omega^2v_1^2v_3 + 24c_s^2v_1 + 24v_1v_3^2 - 36c_s^2\omega v_1 - 14c_s^2\omega^2v_3 - 36\omega v_1v_3^2 + 14c_s^2\omega^2v_1 + \omega^3v_1^2v_3 + 36c_s^2\omega v_3 -$
$24v_1^2v_3 + 14\omega^2v_1v_3^2 - c_s^2\omega^3v_1 - 24c_s^2v_3 + 36\omega v_1^2v_3)\frac{\rho v_2}{\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (-\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + \omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} -$
$2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1 - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2v_3 -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3 + \omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + \omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} + \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} -$
$2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_3 + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} -$
$\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3 + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} -$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2v_1v_3^2 + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_3\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1^2v_3 -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1v_3^2\omega_{18} -$
$2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + \omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3 -$
$2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + \omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + 3\omega_6^2\omega_{19}\omega_{16}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_3 +$
$\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3c_s^2\omega_{17}\omega_8^2v_3\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1v_3^2\omega_{18} + \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2v_1v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_3\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2 - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} - \omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_3 + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_1v_3^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} +$
$\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} -$
$\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_3\omega_{18} - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1v_3^2 - \omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} +$
$5\omega_6^2\omega_{19}\omega_{16}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} - \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} -$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1 + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_3\omega_{18} -$
$4\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_3\omega_{18} - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} + \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} + \omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} +$
$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8^2v_3\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{16}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_3\omega_{18} +$
$2\omega_6^2\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} +$

$$2\omega_6^2\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} - 4\omega_6^2\omega_{19}\omega_{16}^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} +$$
$$2\omega_6^2\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + 3\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$$
$$\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_8^2v_3\omega_{18} + \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_3\omega_{18} +$$
$$\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1 + \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} +$$
$$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} +$$
$$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2v_1^2v_3 + 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1 -$$
$$2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2v_1\omega_{18} -$$
$$\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2 - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3^2 + 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} +$$
$$2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - \omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} +$$
$$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_3\omega_{18} -$$
$$\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} - 6\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_1\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} +$$
$$2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1v_3^2\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} +$$
$$\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_3\omega_{18} -$$
$$3\omega_6\omega_{19}\omega_{16}^2\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_8^2v_3 - \omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2v_3)\frac{\rho v_2}{\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (-\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3 - 2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_3\omega_{18} -$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1 - 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} -$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_1^2v_3\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} + 2\omega_6\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} -$$
$$\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2 - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1 -$$
$$\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_3\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_3\omega_{18} -$$
$$\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_3 - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2v_3 - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1 -$$
$$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_{18} - 2\omega_6\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} -$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - \omega_6\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} +$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_3^2 + 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}v_1\omega_{18} +$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_1v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3 +$$
$$2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_1\omega_{18} +$$
$$\omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_3\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_3^2 + 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} +$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_1^2v_3\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_1v_3^2\omega_{18} -$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_3\omega_{18} - \omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} +$$
$$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_1^2v_3^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$$
$$\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2 + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1\omega_{18} +$$
$$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_1^2v_3\omega_{18} -$$
$$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} -$$
$$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3^2 - 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} -$$
$$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$$
$$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} -$$
$$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_3\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_1v_3^2\omega_{18} -$$
$$2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_1^2v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} -$$
$$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$$
$$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1 + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_3 +$$
$$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_1^2v_3\omega_{18} - \omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} -$$
$$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1v_3^2\omega_{18} +$$
$$2\omega_6\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3 + 2\omega_6\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} +$$
$$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1v_3^2 - 2\omega_6\omega_{19}\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1v_3^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2v_3\omega_{18} -$$
$$2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} +$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}v_1\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_3 + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_1v_3^2\omega_{18} -$$
$$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_3\omega_{18} +$$
$$\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_3\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} +$$
$$2\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1 - 2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1\omega_{18} -$$
$$2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_3 + \omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} -$$
$$2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1v_3^2\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} + \omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_3\omega_{18} +$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_3 + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_3^2\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1v_3^2\omega_{18} -$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_1^2v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3 - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2v_3\omega_{18} -$$
$$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_3 + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} - 2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3^2\omega_{18} +$$
$$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1 - 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_3^2\omega_{18} +$$

$\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_1^2 v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8 v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_1^2 v_3\omega_{18})\frac{\rho v_2}{\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (-24\omega_3 c_s^2\omega_1\omega_2^2 + 10\omega_3\omega_1^3\omega_2 - 4\omega_3\omega_1^2 v_1^2\omega_2 - 2\omega_1^3 v_1^2\omega_2 + 4\omega_3 v_1^2\omega_2^3 - 20\omega_3\omega_1^2\omega_2^2 - 24\omega_3 c_s^2\omega_1\omega_2^3 + 2\omega_1\omega_2^3 - 2\omega_1 v_1^2\omega_2^3 + 28\omega_3 c_s^2\omega_1^3 + 12c_s^2\omega_1^2\omega_2^2 - 13\omega_3\omega_1 v_2^2\omega_2^3 + 14\omega_3\omega_1^2\omega_2 + 26\omega_3 c_s^2\omega_2^3 + 16\omega_3\omega_1^3 v_2^2 - 6c_s^2\omega_1^3\omega_2 - 13\omega_3\omega_1^3 v_2^2\omega_2 - 4\omega_3\omega_1 v_2^2\omega_2^2 + 6\omega_3\omega_1^2 v_1^2\omega_2^2 + 4\omega_3\omega_1^3 v_1^2 - 6c_s^2\omega_1\omega_2^3 - 30\omega_3 c_s^2\omega_1^2\omega_2 - 3\omega_3\omega_1 v_1^2\omega_2^3 - 4\omega_3\omega_1 v_1^2\omega_2^2 + 26\omega_3\omega_1^2 v_2^2\omega_2^2 - 3\omega_3\omega_1^3 v_1^2\omega_2 - 10\omega_3\omega_2^3 - 22\omega_3\omega_1^2 v_2^2\omega_2 + 8\omega_3\omega_1\omega_2^2 - 24\omega_3 c_s^2\omega_1^3\omega_2 + 2\omega_1^3\omega_2 + 4\omega_1^2 v_1^2\omega_2^2 - 12\omega_3\omega_1^3 + 10\omega_3\omega_1\omega_2^3 + 48\omega_3 c_s^2\omega_1^2\omega_2^2 + 10\omega_3 v_2^2\omega_2^3 - 4\omega_1^2\omega_2^2)\frac{\rho v_1 v_2}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (-2c_s^2\omega^3 v_1 v_3 - 14c_s^2\omega^2 v_2^2 + 36c_s^2\omega v_1^2 - 14\omega^2 v_1^2 v_2^2 + c_s^2\omega^3 v_2^2 - 24c_s^2 v_1^2 - 72\omega v_1 v_2^2 v_3 - 72c_s^2\omega v_1 v_3 - 2\omega^3 v_1 v_2^2 v_3 + 36\omega v_1^2 v_2^2 + c_s^2\omega^3 v_1^2 - 24c_s^2 v_2^2 + 28c_s^2\omega^2 v_1 v_3 - 24v_1^2 v_2^2 + 48v_1 v_2^2 v_3 + 28\omega^2 v_1 v_2^2 v_3 - 14c_s^2\omega^2 v_1^2 + 36c_s^2\omega v_2^2 + \omega^3 v_1^2 v_2^2 + 48c_s^2 v_1 v_3)\frac{\rho}{2\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} =$
$(2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} + 4\omega_6^2\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18} + 8\omega_6\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} -$
$\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} + 6\omega_6^2\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8 v_1\omega_5 v_3\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8 v_1^2\omega_5 v_2^2\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} + 4\omega_6^2\omega_{19}\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3 - 2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8 v_1^2\omega_5 v_2^2\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8 v_1^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1 v_3\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8 v_1\omega_5 v_2^2 v_3\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 v_2^2\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 v_2^2 - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} -$
$4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} + \omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} + 2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2 v_1\omega_5 v_3\omega_{18} -$
$4\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2 + \omega_6^2\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} +$
$2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5 v_2^2\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} -$
$\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8 v_1^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2 - 2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5 v_2^2\omega_{18} +$
$\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5 v_2^2 + 2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} - 8\omega_6^2\omega_{19}^2\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} +$
$2\omega_6\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8 v_1\omega_5 v_3\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 v_2^2\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8 v_1\omega_5 v_2^2 v_3\omega_{18} + 4\omega_6^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18} +$
$12\omega_6^2\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} - 2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3 + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5\omega_{18} +$
$4\omega_6^2\omega_{19}^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8^2 v_1\omega_5 v_3\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1 v_3\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} +$
$2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8 v_1^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5 v_2^2\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 v_2^2\omega_{18} +$
$4\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5\omega_{18} + 4\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8 v_1\omega_5 v_3\omega_{18} + 4\omega_6\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3 +$
$\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2 + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5 v_2^2\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_3\omega_{18} +$
$4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} -$
$4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2 v_3 +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8 v_1^2\omega_5 v_2^2\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8 v_1^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1^2\omega_5 v_2^2\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2 v_3 +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8 v_1^2\omega_5 v_2^2\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8 v_1^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2 c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 v_2^2\omega_{18} + \omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5 v_2^2 + 4\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} +$
$4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_2^2 v_3\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} + \omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2 v_1^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 v_2^2\omega_{18} - 2\omega_6\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1 v_3\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2 v_1\omega_5 v_3 -$

$\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5v_2^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_2^2\omega_{18} + 4\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3 +$
$4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5v_2^2v_3 - 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8v_1^2\omega_5v_2^2\omega_{18} -$
$2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5v_2^2 + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8v_1^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2v_1\omega_5v_3\omega_{18} - 4\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18} + 2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5v_2^2\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5\omega_{18} -$
$4\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5v_2^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_2^2\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} -$
$4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8v_1\omega_5v_2^2v_3\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8v_1^2\omega_5v_2^2\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8v_1v_3\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8v_1\omega_5v_3\omega_{18} +$
$8\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5v_2^2\omega_{18} + \omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5v_2^2\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} - 4\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8v_1\omega_5v_2^2v_3\omega_{18} - 4\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2v_3\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5v_2^2 + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5\omega_{18} - 14\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8v_1\omega_5v_3\omega_{18} -$
$2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5v_2^2\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5v_2^2\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5v_2^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} + 4\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8v_1^2\omega_5v_2^2\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5v_3 -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8v_1^2\omega_5v_2^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5v_3\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5v_2^2\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5 - 2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5v_2^2\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5v_2^2\omega_{18} - 12\omega_{6}\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8v_1\omega_5v_3\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} +$
$4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8v_1\omega_5v_2^2v_3\omega_{18} + 4\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} + \omega_6^2\omega_{19}^3\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3\omega_{18} + 4\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} + 4\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5v_3\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5 -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5v_2^2\omega_{18} - \omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8v_1\omega_5v_2^2v_3\omega_{18} -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2v_1^2\omega_5v_2^2 + 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8v_1\omega_5v_2^2v_3\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8v_1^2\omega_5v_2^2\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8^2\omega_5v_2^2\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2v_1\omega_5v_3\omega_{18} + 2\omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18} +$
$8\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2v_1\omega_5v_3\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2 +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8v_1^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_2^2v_3 - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_2^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5v_2^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8\omega_5v_2^2\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{17}\omega_{11}^2\omega_8v_1^2\omega_5\omega_{18} + \omega_6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2v_1^2\omega_5v_2^2\omega_{18} + 4\omega_6^2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2v_1\omega_5v_3\omega_{18})\frac{\rho}{2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2v_2^2\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_2^2\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} +$
$\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} - 4\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1v_2^2v_3\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18} + 4\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_1v_2^2v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} + 4\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_2^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2v_2^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_2^2\omega_{18} - 2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_2^2\omega_{18} - 4\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} +$
$4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1v_3 + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 4\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} + 4\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3\omega_{18} +$
$\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}v_1^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3\omega_{18} +$
$4\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_1v_2^2v_3\omega_{18} -$
$\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1v_3\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2v_2^2\omega_{18} +$
$4\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3 - \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} -$
$4\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} -$
$4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_1v_3\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} +$
$4\omega_6\omega_{19}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_1^2v_2^2\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2 -$
$4\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} - 2\omega_6\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - 4\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2v_2^2 +$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_2^2 + 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3 - 4\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} - 2\omega_6\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 4\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2v_2^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} + 4\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}v_1v_2^2\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_2^2\omega_{18} -$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1^2 - 4\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1v_2^2v_3\omega_{18} - 4\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3\omega_{18} -$

$4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_1v_2^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1^2 - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_1^2v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 4\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_1v_3\omega_{18} + 2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} -$
$4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1v_2^2v_3\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}v_1^2\omega_{18} +$
$2\omega_6\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3 + \omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} -$
$2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2 +$
$4\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} - 4\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3\omega_{18} - 4\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} - 2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - \omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - \omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_1^2v_2^2\omega_{18} + 4\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1v_2^2v_3\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18} - 4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3 - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1^2 -$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2 - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_1^2v_2^2\omega_{18} -$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}v_2^2\omega_{18} + 4\omega_6\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2 + 4\omega_6\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2 +$
$2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - 2\omega_6\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} - 4\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1v_3\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1^2\omega_{18} -$
$4\omega_6\omega_{19}\omega_{16}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} - 4\omega_6\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} +$
$4\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}v_1v_3\omega_{18} - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_2^2 - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_1^2\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1v_2^2v_3\omega_{18} -$
$2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1^2 -$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2 - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_1^2v_2^2\omega_{18} + 2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} - 4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3 -$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}v_2^2\omega_{18} - 4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1v_3\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_2^2 - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} -$
$4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_1v_2^2v_3\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}v_1v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} +$
$4\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1v_3\omega_{18} - \omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} + \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_2^2 - 2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18} +$
$2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} +$
$4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2v_2^2 - 4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}v_1v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} +$
$4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_1v_2^2v_3\omega_{18} - 4\omega_6\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} -$
$4\omega_6\omega_{19}\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_1^2v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} + \omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3 -$
$4\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} - 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_8v_1^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}v_1^2\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2 - 2\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3\omega_{18} + \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2 -$
$2\omega_6\omega_{16}\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} + 4\omega_6\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_2^2v_3\omega_{18} - 4\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1v_3\omega_{18} + 4\omega_6\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} - 2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3 +$
$4\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} + 4\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_1v_2^2v_3\omega_{18} - 4\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}v_2^2\omega_{18} + 4\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3\omega_{18} - 2\omega_6\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} + 2\omega_6\omega_{19}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1v_3\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_{11}v_1^2\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3 - \omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1v_2^2v_3 +$
$2\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} + 2\omega_6\omega_{16}\omega_7\omega_{23}c_s^2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18} + 4\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{17}\omega_{11}\omega_8v_1v_3 - 2\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}\omega_7c_s^2\omega_{20}\omega_{17}\omega_8v_1v_3\omega_{18} + 4\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1v_2^2v_3)\frac{\rho}{2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (2\omega_3\omega_4\omega_1v_1^2 - 6\omega_3\omega_4c_s^2\omega_2 + 9\omega_4\omega_1\omega_2 + 6\omega_3\omega_4c_s^2\omega_1 - 2\omega_3\omega_4v_1^2\omega_2 - 27\omega_4c_s^2\omega_1\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_3\omega_1\omega_2 +$
$9\omega_3\omega_1v_1^2\omega_2 - 9\omega_4\omega_1v_1^2\omega_2 + 2\omega_3\omega_4\omega_2)\frac{\rho v_1v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^3\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (24 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 3c_s^2\omega^3 + 36\omega v_2^2 - 42c_s^2\omega^2 - 36\omega - 14\omega^2v_2^2 - 72c_s^2 - 24v_2^2 + \omega^3v_2^2)\frac{c_s^2v_2}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (-15\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 + 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11} - 18\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 - 60\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11} -$
$72\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_3^2 - 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_3^2 + 15\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11} + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} - 48\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_3^2 -$
$12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_3^2 + 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^4\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 - 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 + 36\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4\omega_{11} +$
$12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 + 6\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 - 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_2^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4\omega_{11} - 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_3^2 +$
$18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4 - 9\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_3^2 + 36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 - 5\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 - 6\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_3^2 +$
$6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_2^2 - 36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4 + 27\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 + 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}v_2^2v_3^2 -$
$6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11} - 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_3^2 + 6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_2^2v_3^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11} +$

$$54\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11} + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_2^2v_3^2 - 36\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11} - 36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_3^2 +$$
$$18\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11} + 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_3^2 + 144\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 + 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}v_2^2v_3^2 +$$
$$36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 + 12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2v_3^2 + \omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 + 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 -$$
$$6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2v_3^2 + 36\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}v_2^2v_3^2 + 36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11} +$$
$$12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}v_3^2 - 96\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23}c_s^4\omega_{11} + 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}v_2^2v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11} +$$
$$6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2 - 15\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11} - 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}v_2^2v_3^2 - 6\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11} - 12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}v_3^2 +$$
$$72\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2v_3^2 - 42\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}v_3^2 + 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 +$$
$$3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}v_2^2 - 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 -$$
$$72\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 + 15\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11} - 3\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 +$$
$$12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2v_3^2 - 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2v_3^2 + 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}v_3^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{11} +$$
$$12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 + 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} - 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 36\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{11} + 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} -$$
$$6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 + 156\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11} - 45\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}v_2^2 +$$
$$6\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 - 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^4\omega_{11} + 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_3^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_3^2 -$$
$$36\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_3^2 + 9\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 + 3\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} + 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_3^2 - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11} +$$
$$12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_2^2 + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11} - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_2^2 + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_3^2 +$$
$$6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 - 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2v_3^2 + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_3^2 - 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_3^2 -$$
$$18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}v_2^2 + 36\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_3^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_3^2 - \omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} -$$
$$18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_2^2v_3^2 + 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_2^2 + 36\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2 +$$
$$72\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}v_3^2 + 48\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_2^2 - 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_2^2 - 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}v_3^2 -$$
$$6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_3^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_2^2 - 36\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_2^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_3^2 + 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2v_3^2 -$$
$$24\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}v_2^2v_3^2 - 108\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 - 36\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} +$$
$$18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 - 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_3^2 +$$
$$5\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} + 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 - 6\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2 + 36\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_3^2)\frac{v_2}{12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (12\omega_{16}^2\omega_7\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{11} + 36\omega_{16}^2\omega_{10}\omega_7^2c_s^2 - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11} -$$
$$36\omega_{16}^2\omega_7\omega_{23}c_s^2\omega_{11} + 54\omega_{19}\omega_{16}^2\omega_7\omega_{23}c_s^2\omega_{11} + 12\omega_{16}^2\omega_{10}\omega_7\omega_{11}v_2^2 - 12\omega_{16}^2\omega_7^2\omega_{23}v_2^2 - 36\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{11} + 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{11} -$$
$$12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{11}v_2^2 - 12\omega_{19}\omega_{16}^2\omega_{23}\omega_{11}v_2^2 - 6\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{11}v_2^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} - 36\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} -$$
$$12\omega_{19}\omega_{16}^2\omega_{10}\omega_{23}\omega_{11} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 3\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 - 36\omega_{16}^2\omega_7^2\omega_{23}c_s^2 - 5\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}v_2^2 + 12\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}v_2^2 +$$
$$5\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11} + 12\omega_{16}^2\omega_{10}\omega_7^2v_2^2 - 6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + \omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 + 12\omega_{16}^2\omega_7^2\omega_{23} +$$
$$36\omega_{19}\omega_{16}^2\omega_{10}\omega_{23}c_s^2\omega_{11} - 12\omega_{16}^2\omega_{10}\omega_7\omega_{11} + 54\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} + 6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{11} - 18\omega_{19}\omega_{16}^2\omega_7\omega_{23}\omega_{11} +$$
$$12\omega_{16}^2\omega_{10}\omega_7^2\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2 - 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2c_s^2 + 36\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11} - 15\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11} + 3\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} +$$
$$12\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{11}v_2^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{11} + 18\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} +$$
$$18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_{23}\omega_{11}v_2^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}v_2^2 - \omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 18\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2 - 12\omega_{16}^2\omega_{10}\omega_7^2 -$$
$$12\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7c_s^2\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_2^2 + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}v_2^2 - 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}v_2^2 + 36\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{11} +$$
$$18\omega_{19}\omega_{16}^2\omega_7\omega_{23}\omega_{11}v_2^2 - 12\omega_{16}^2\omega_7\omega_{23}\omega_{11}v_2^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11}v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{11} + 36\omega_{19}\omega_{16}\omega_{10}\omega_7c_s^2\omega_{11} - 36\omega_{19}\omega_{16}^2\omega_{23}c_s^2\omega_{11} +$$
$$3\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 9\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 12\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11}v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{23}\omega_{11})\frac{c_s^2v_2}{12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (12\omega_3\omega_{11}^2\omega_5 + 3\omega_3^2c_s^2\omega_{11}^2 + 18\omega_3\omega_{11}\omega_5v_2^2 - 36c_s^2\omega_{11}^2 + 12\omega_3\omega_5 - 6\omega_3\omega_{11}^2 + 6\omega_3^2\omega_5v_2^2 + 3\omega_3^2\omega_{11}\omega_5 + 54\omega_3c_s^2\omega_{11}\omega_5 +$$
$$18\omega_3^2c_s^2\omega_5 + 12\omega_{11}\omega_5 + 12\omega_{11}^2 + \omega_3^2\omega_{11}^2\omega_5v_2^2 - 12\omega_{11}^2v_2^2 + \omega_3^2\omega_{11}^2v_2^2 - 12\omega_3\omega_{11} + 3\omega_3^2c_s^2\omega_{11}^2\omega_5 + 36c_s^2\omega_{11}^2\omega_5 - 18\omega_3^2c_s^2\omega_{11} + 12\omega_{11}^2\omega_5v_2^2 +$$
$$12\omega_3\omega_{11}v_2^2 - 3\omega_3^2\omega_{11}\omega_5v_2^2 - 36c_s^2\omega_{11}\omega_5 + 6\omega_3\omega_{11}^2v_2^2 - 9\omega_3^2c_s^2\omega_{11}\omega_5 + 6\omega_3^2\omega_{11} + 36\omega_3c_s^2\omega_{11} - 12\omega_{11}\omega_5v_2^2 - 6\omega_3^2\omega_{11}v_2^2 - \omega_3^2\omega_{11}^2 +$$
$$18\omega_3c_s^2\omega_{11}^2 - \omega_3^2\omega_{11}^2\omega_5 - 36\omega_3c_s^2\omega_{11}^2\omega_5 - 12\omega_{11}^2\omega_5 - 12\omega_3\omega_{11}^2\omega_5v_2^2 - 18\omega_3\omega_{11}\omega_5 - 12\omega_3\omega_5v_2^2 - 36\omega_3c_s^2\omega_5 - 6\omega_3^2\omega_5)\frac{c_s^2v_2}{12\omega_3^2\omega_{11}^2\omega_5}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (-108\omega_4^2c_s^4\omega_1^2\omega_2^3 + 228\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 - 712\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 6\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^4 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 -$$
$$56\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 - 72\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 + 52\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 36\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 56\omega_3^2\omega_4^2\omega_1^3v_2^2 -$$
$$36\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 18\omega_4^2c_s^2\omega_1^3\omega_2^3 + 1232\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 208\omega_3^2\omega_4^2c_s^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 132\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 +$$
$$72\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 - 24\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 - 136\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 36\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 144\omega_3^2\omega_4^2v_2^4\omega_2^3 + 208\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 6\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^2 + 184\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 -$$
$$108\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 - 9\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 - 104\omega_3^2\omega_4^2c_s^2\omega_1^3 + 104\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 36\omega_4^2c_s^2\omega_1^2\omega_2^3 - 56\omega_3\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 - 118\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 +$$
$$216\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 48\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 78\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 +$$
$$18\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 6\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 + 54\omega_4^2c_s^4\omega_1^3\omega_2^3 + 320\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 + 16\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 - 88\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 120\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 -$$
$$6\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3 - 9\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 + 92\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 394\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 - 342\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 -$$
$$276\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 - 16\omega_3^2\omega_4^2\omega_2^3 - 288\omega_3^2\omega_4^2c_s^4\omega_2^3 + 152\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 18\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 + 32\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 120\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 +$$
$$160\omega_3^2\omega_4^2v_2^2\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 588\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 256\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 40\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 18\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^3 - 168\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 -$$
$$144\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 + 448\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 18\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 - 412\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 78\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 +$$
$$48\omega_3^2\omega_4^2\omega_1^3v_2^4 - 784\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^2 - 368\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 36\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 144\omega_3^2\omega_4^2c_s^4\omega_1^3 -$$
$$96\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 + 56\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^4 - 460\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 - 92\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 56\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3)\frac{v_2}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(3)}_{\mathrm{D}^3_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^3 \partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = (-12 - 6\omega^2 - c_s^2\omega^3 - 54\omega v_2^2 + 2c_s^2\omega^2 + 18\omega + 18\omega^2 v_2^2 + 36 v_2^2)\frac{c_s^2\rho}{12\omega^3}$$

$$\begin{aligned}
C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = {} & (-45\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 + 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 - 5\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11} - \\
& 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2v_3^2 - 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_3^2 + 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11} + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} - 48\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_3^2 - \\
& 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^4\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4\omega_{11} + \\
& 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 - 12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 - 36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_2^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^4\omega_{11} - 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_3^2 + \\
& 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4 - 9\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 - 48\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23}c_s^2\omega_{11}v_2^2 + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 - 15\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 - \\
& 6\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_3^2 + 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_2^2 - 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4 + 9\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 + 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}v_2^2v_3^2 - \\
& 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2v_3^2 + 6\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}v_3^2 - 36\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_2^2v_3^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11} + \\
& 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11} + 36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_2^2v_3^2 - 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^4\omega_{11} - 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 + \\
& 6\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 + 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_3^2 + 48\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 + 72\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}v_2^2v_3^2 + 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 + \\
& 36\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 + 36\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2v_3^2 + 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2v_3^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_3^2 - \\
& 12\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}v_3^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}v_2^2v_3^2 + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11} + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23}c_s^4\omega_{11} - \\
& 102\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 + 36\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}v_2^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2 - 5\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^4\omega_{11} - \\
& 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}v_2^2v_3^2 - 12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}v_3^2 + 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2v_3^2 - 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^4\omega_{11} + 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 - \\
& 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}v_3^2 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2v_3^2 - \omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^4\omega_{11} + 60\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}v_2^2 - 36\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 - \\
& 108\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 - 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}v_3^2 - 36\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 + 15\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11} + \\
& 30\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11} - 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2v_3^2 - 36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2v_3^2 + 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}v_3^2 + \\
& 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{11} - 15\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 - 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4\omega_{11} + 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - \\
& 18\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{11} - 15\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2 + 60\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}v_2^2 + \\
& 18\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 - 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^4\omega_{11} + 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_3^2 + \omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_3^2 - \\
& 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_3^2 + 27\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 - 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^4\omega_{11} + \\
& 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_2^2 + 36\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11} - 36\omega_{16}^2\omega_{10}^3\omega_7^2c_s^2\omega_{11}v_2^2 + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_3^2 + \\
& 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_2^2 - 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 - 72\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2v_3^2 + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_3^2 - 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_3^2 + \\
& 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}v_2^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_3^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_3^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^4 + \\
& 36\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_2^2v_3^2 + 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}v_3^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_2^2 + 12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2 + \\
& 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}v_3^2 + 144\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_2^2v_3^2 + 36\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}v_2^2 - 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}v_2^2 - 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}v_3^2 - \\
& 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_3^2 + 36\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_2^2 - 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_2^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_3^2 + 72\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2v_3^2 - \\
& 72\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}v_2^2v_3^2 - 36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 - 36\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 - 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} + \\
& 54\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 + 24\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^4\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_3^2 + \\
& 5\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 + 12\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2 + 12\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2v_3^2)\frac{\rho}{12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}}
\end{aligned}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2}$$

$$\begin{aligned}
C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = {} & (18\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_2^2 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_2^2 + 12\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11} + 36\omega_{16}\omega_7^3\omega_{23}\omega_{11}v_2^2 - 12\omega_{16}\omega_{10}\omega_7^2\omega_{11} - \\
& 15\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}v_2^2 - 12\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11} - 12\omega_{16}\omega_{10}\omega_7^3 + 12\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11} - 6\omega_{19}\omega_{10}\omega_7^3c_s^2\omega_{11} - 36\omega_{16}\omega_7^3\omega_{23}v_2^2 + \\
& 12\omega_{19}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} - 3\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 + 12\omega_{16}\omega_{10}\omega_7^3\omega_{11} + 36\omega_{19}\omega_{10}\omega_7^2\omega_{11}v_2^2 - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2 - 36\omega_{16}\omega_{10}\omega_7^3\omega_{11}v_2^2 - \\
& 12\omega_{19}\omega_{16}\omega_{10}\omega_{23}c_s^2\omega_{11} + 12\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11}v_2^2 + 18\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 5\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 + \\
& 18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} - 54\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 - 12\omega_{16}\omega_7^3\omega_{23}c_s^2 + 54\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_2^2 - 36\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_2^2 + 12\omega_{19}\omega_{10}\omega_7^2c_s^2\omega_{11} + \\
& 36\omega_{16}\omega_{10}\omega_7^3v_2^2 + 6\omega_{19}\omega_{10}\omega_7^3\omega_{11} - 12\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11} - \omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11} + \\
& 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 18\omega_{19}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 18\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2 - 12\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} + 18\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} - \\
& 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11} + 12\omega_{16}\omega_{10}\omega_7^3c_s^2 - 12\omega_{19}\omega_{10}\omega_7^2\omega_{11} + 6\omega_{19}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 5\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} + 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} - 18\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} - \\
& 36\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11}v_2^2 - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 36\omega_{16}\omega_{10}\omega_7^2\omega_{11}v_2^2 - 36\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}v_2^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 - 6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{11} + \\
& \omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 5\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} + 12\omega_{16}\omega_7^3\omega_{23} + 36\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11}v_2^2 - 18\omega_{19}\omega_{10}\omega_7^3\omega_{11}v_2^2)\frac{c_s^2\rho}{12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}}
\end{aligned}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2}$$

$$\begin{aligned}
C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = {} & (3\omega_3^3\omega_{11}v_2^2 - 12\omega_3\omega_5 - 54\omega_3^2\omega_5v_2^2 + \omega_3^2\omega_{11}\omega_5 + 18\omega_3c_s^2\omega_{11}\omega_5 - 18\omega_3^2c_s^2\omega_5 + 12\omega_3^2c_s^2 - 18\omega_3^3v_2^2 + 12\omega_3\omega_{11} - 12\omega_3^2 - 6\omega_3^3c_s^2 + \\
& 36\omega_3^2v_2^2 + 6\omega_3^2c_s^2\omega_{11} + 6\omega_3^3 - 36\omega_3\omega_{11}v_2^2 + 6\omega_3^3c_s^2\omega_5 - 3\omega_3^2\omega_{11}\omega_5v_2^2 - 12c_s^2\omega_{11}\omega_5 + 18\omega_3^3\omega_5v_2^2 - 6\omega_3^3\omega_5 - 5\omega_3^2c_s^2\omega_{11}\omega_5 - 6\omega_3^2\omega_{11} - \\
& 12\omega_3c_s^2\omega_{11} + 18\omega_3^2\omega_{11}v_2^2 + \omega_3^3c_s^2\omega_{11} - \omega_3^3c_s^2\omega_{11}\omega_5 + 36\omega_3\omega_5v_2^2 - \omega_3^3\omega_{11} + 12\omega_3c_s^2\omega_5 + 18\omega_3^2\omega_5)\frac{c_s^2\rho}{12\omega_3^3\omega_{11}\omega_5}
\end{aligned}$$

$$\begin{aligned}
C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = {} & (60\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 - 108\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 + 3\omega_3\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 222\omega_3\omega_4\omega_1v_2^2\omega_2^3 - 20\omega_3\omega_4c_s^2\omega_1^3 - 28\omega_3\omega_4c_s^4\omega_1\omega_2^2 + \\
& 153\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 12\omega_3\omega_4\omega_1v_2^2\omega_2^2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 - 54\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3c_s^2\omega_1\omega_2^3 + 138\omega_3\omega_4\omega_1^3v_2^2\omega_2 + 94\omega_3\omega_4c_s^4\omega_1\omega_2^3 - \\
& 8\omega_4c_s^2\omega_1\omega_2^3 + 192\omega_3\omega_4\omega_1^2v_2^4\omega_2 - \omega_3\omega_4\omega_1^2\omega_2^3v_3^4 - 168\omega_3\omega_4\omega_1^2v_2^4\omega_2^2 - 60\omega_3\omega_4\omega_1^3v_2^2 - 288\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2 - 60\omega_3\omega_4c_s^2\omega_1v_2^2\omega_2^2 + 32\omega_3\omega_4c_s^2\omega_1\omega_2^2 - \\
& 81\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 - 264\omega_3\omega_4v_2^4\omega_2^3 - 138\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 36\omega_3c_s^4\omega_1\omega_2^3 - 54\omega_3\omega_4c_s^2\omega_1\omega_2^3 + 40\omega_3\omega_4c_s^2\omega_2^3 + 8\omega_3\omega_4\omega_1^2\omega_2 + \\
& 432\omega_3\omega_4c_s^2\omega_1v_2^2\omega_2^3 - \omega_3\omega_4\omega_1^3\omega_2v_3^2 - 312\omega_3\omega_4c_s^2v_2^2\omega_2^3 + 8\omega_4c_s^4\omega_1\omega_2^3 - 24\omega_3\omega_4\omega_1v_2^4\omega_2^2 - 9\omega_4c_s^2\omega_1^3\omega_2^3 - 3\omega_3\omega_4c_s^4\omega_1^3\omega_2^3 + 8\omega_3\omega_4c_s^4\omega_1^2\omega_2 -
\end{aligned}$$

$240\omega_3\omega_4\omega_1^3v_2^4\omega_2 - 36\omega_3c_s^4\omega_1^2\omega_2^3 + \omega_3\omega_4\omega_1^2\omega_2^3v_3^2 - 9\omega_3c_s^2\omega_1^3\omega_2^3 + 42\omega_3\omega_4c_s^2\omega_1^3\omega_2 - 90\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 + 24\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - 96\omega_3\omega_4\omega_1^2v_2^2\omega_2 -$
$18\omega_4c_s^4\omega_1^2\omega_2^3 + 27\omega_4c_s^2\omega_1^3v_2^2\omega_2^3 + 96\omega_3\omega_4\omega_1^3v_2^4 + 8\omega_4c_s^4\omega_1^3\omega_2 + 17\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 + 408\omega_3\omega_4\omega_1v_2^4\omega_2^3 + 18\omega_4c_s^2\omega_1^3\omega_2^2 - 8\omega_3\omega_4\omega_2^3 + \omega_3\omega_4\omega_1^3\omega_2^2v_3^4 +$
$20\omega_4c_s^4\omega_1^2\omega_2^2 - 54\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 27\omega_3c_s^2\omega_1^3v_2^2\omega_2^3 + 16\omega_3\omega_4c_s^4\omega_1^3 - 6\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 153\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 + 9\omega_4c_s^4\omega_1^3\omega_2^3 + 144\omega_3\omega_4v_2^2\omega_2^3 +$
$24\omega_4c_s^2\omega_1^3v_2^2\omega_2 + 81\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 - 16\omega_3\omega_4c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_4\omega_1^3 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_1v_2^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 - 29\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 -$
$68\omega_3\omega_4c_s^4\omega_2^3 - 32\omega_3\omega_4c_s^4\omega_1^3\omega_2 - 8\omega_4c_s^2\omega_1^3\omega_2 + 18\omega_4c_s^2\omega_1^2\omega_2^3 + 24\omega_4c_s^2\omega_1v_2^2\omega_2^3 - 24\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2^2 + 120\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2 +$
$84\omega_3\omega_4\omega_1^2v_2^2\omega_2^2 - 3\omega_3\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 18\omega_4c_s^4\omega_1^3\omega_2^2 - 20\omega_4c_s^2\omega_1^2\omega_2^2 + 144\omega_3\omega_4c_s^2\omega_1^3v_2^2 + 138\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 10\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y^3\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (2 + 3c_s^2\omega + \omega v_2^2 - \omega - 6c_s^2 - 2v_2^2)\frac{\rho v_2 v_3}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (-12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_2^2 - 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} + 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}^2 -$
$24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2v_2^2 - 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2 - 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 -$
$24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2v_2^2 + 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2v_2^2 - 66\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 66\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2v_2^2 + 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 +$
$12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + \omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2v_2^2 - 42\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11} -$
$12\omega_{19}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2v_2^2 -$
$12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}^2v_2^2 - 18\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2v_2^2 + 72\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2 +$
$12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3c_s^2\omega_{11} + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2 - 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 +$
$12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} + 84\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} + 3\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 18\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2v_2^2 + 90\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 +$
$6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2v_2^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2v_2^2 - 66\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 -$
$48\omega_{19}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 156\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2 + 24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2v_2^2 - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} -$
$24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_2^2 + 36\omega_{19}^2\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2 +$
$12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_2^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} + 48\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11} + 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}v_2^2 - 6\omega_{19}^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}^2v_2^2 +$
$24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2v_2^2 + 12\omega_{19}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2v_2^2 - 24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2 + 36\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 -$
$24\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 60\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 36\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2v_2^2 - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 + 6\omega_{19}^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}^2v_2^2 + 24\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} - 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}v_2^2 - 24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2v_2^2 +$
$18\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 84\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 + 18\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 132\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 +$
$24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2v_2^2 - 24\omega_{19}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2v_2^2 - 36\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}c_s^2\omega_{11}^2 +$
$24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{10}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 96\omega_{19}^2\omega_{16}^2\omega_{10}\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} +$
$12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2v_2^2 - 72\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11} - 18\omega_{19}^2\omega_{16}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2c_s^2\omega_{11}^2 + 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}^2v_2^2 -$
$\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}v_2^2)\frac{\rho v_2 v_3}{12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (\omega_{16}v_2^2 + \omega_{16}\omega_{10}v_2^2 - \omega_{16} + 3\omega_{10} + 3\omega_{16}c_s^2 + 3\omega_{16}\omega_{10}c_s^2 - \omega_{16}\omega_{10} - 9\omega_{10}c_s^2 - 3\omega_{10}v_2^2)\frac{\rho v_2 v_3}{12\omega_{16}\omega_{10}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (-9c_s^2\omega_5 - \omega_{11}\omega_5 - 3\omega_5v_2^2 + 3c_s^2\omega_{11} + 3c_s^2\omega_{11}\omega_5 - \omega_{11} + \omega_{11}v_2^2 + \omega_{11}\omega_5v_2^2 + 3\omega_5)\frac{\rho v_2 v_3}{12\omega_{11}\omega_5}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (-9\omega_3\omega_1v_2^2\omega_2 - 9\omega_4\omega_1v_2^2\omega_2 - 18\omega_3\omega_4\omega_2v_3^2 + 6\omega_3\omega_4c_s^2\omega_2 + 18\omega_3\omega_4c_s^2\omega_1\omega_2 + 9\omega_4\omega_1\omega_2 + 12\omega_3\omega_4c_s^2\omega_1 + 6\omega_3\omega_4\omega_1v_2^2\omega_2 -$
$27\omega_4c_s^2\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 4\omega_3\omega_4v_2^2\omega_2 + 9\omega_3\omega_1\omega_2 + 18\omega_3\omega_4\omega_1v_3^2 + 2\omega_3\omega_4\omega_2 + 2\omega_3\omega_4\omega_1v_2^2)\frac{\rho v_2 v_3}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (24 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 5c_s^2\omega^3 + 36\omega v_3^2 - 46c_s^2\omega^2 - 36\omega - 14\omega^2v_3^2 - 72c_s^2 + \omega^3v_3^2 - 24v_3^2)\frac{c_s^2v_3}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 + 6\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_1^2v_3^2 -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2 + 12\omega_6^2\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2 + 12\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^3 + 36\omega_6^2c_s^4\omega_{11}^3\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 -$
$12\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18} + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{13}\omega_{11}^3v_1^2\omega_{18} + 12\omega_6^2c_s^2\omega_{11}^3v_3^2\omega_{18}^2 - 36\omega_6^3\omega_{13}c_s^4\omega_{11}^3\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2 +$
$18\omega_6^3\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18}^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2v_3^2\omega_{18}^2 + 12\omega_6^2\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18} + 12\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18} -$
$18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18} - 6\omega_6^3\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2 - 36\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 24\omega_6\omega_{22}\omega_{13}\omega_{11}^3v_1^2\omega_{18} -$
$18\omega_6^3c_s^2\omega_{11}^3v_1^2\omega_{18}^2 - 18\omega_6^3\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2 + 30\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18} - 54\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2 + 6\omega_6^3c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2\omega_{11}^3v_1^2v_3^2\omega_{18}^2 +$
$36\omega_6^3\omega_{13}c_s^4\omega_{11}^2\omega_{18} - 24\omega_6\omega_{22}\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18} + 5\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 - 36\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18} - 48\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2 +$
$72\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 + 12\omega_6^2\omega_{22}\omega_{11}^2v_1^2\omega_{18}^2 - 24\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18} - 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_1^2\omega_{18} - 12\omega_6^2c_s^2\omega_{11}^3\omega_{18}^2 + 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2 + 6\omega_6^3\omega_{22}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2 +$
$24\omega_6\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{13}c_s^2\omega_{11}^3\omega_{18} + 108\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} - 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2 - 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2 +$
$12\omega_6^2\omega_{13}\omega_{11}^3v_1^2\omega_{18}^2 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_1^2 - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18} + 18\omega_6^3\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 - 36\omega_6^2\omega_{22}c_s^4\omega_{11}^2\omega_{18}^2 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 -$

$36\omega_6^3\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} + 36\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{18}^2 - 42\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18} + 18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2 -$
$12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18} - 12\omega_6^2\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18}^2 - 18\omega_6^3c_s^4\omega_{11}^3\omega_{18}^2 - 42\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18} -$
$12\omega_6^2\omega_{13}c_s^2\omega_{11}^3\omega_{18} + 72\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18} - 6\omega_6^3\omega_{22}\omega_{11}^2v_1^2\omega_{18}^2 + 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18} +$
$12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 36\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2 + 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2 + 180\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 - 72\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2 - 72\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 - 12\omega_6^3\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18} -$
$12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} - 6\omega_6^3\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 + 6\omega_6^3\omega_{22}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 + 6\omega_6^3\omega_{11}^3v_1^2\omega_{18}^2 - 18\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 -$
$36\omega_6^2\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18}^2 + 18\omega_6^3\omega_{22}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 + 150\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2 + 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3 + \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18}^2 -$
$36\omega_6^2\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 + 18\omega_6^3\omega_{22}c_s^4\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18}^2 + 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18} - 12\omega_6^3\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3v_1^2v_3^2 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3v_1^2 - 6\omega_6^3\omega_{13}\omega_{11}^3v_1^2\omega_{18}^2 + 36\omega_6^2\omega_{13}c_s^4\omega_{11}^3\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18} -$
$6\omega_6^3c_s^2\omega_{11}^3v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{11}^3v_1^2\omega_{18}^2 - 18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18} + 6\omega_6^3\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{13}\omega_{11}^3v_1^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18}^2 - 84\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}^2 - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^3 +$
$36\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2 - 96\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 + 12\omega_6^3\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18} + 36\omega_6^3\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}^2 + 36\omega_6^2\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} + 36\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3v_1^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_3^2 - 6\omega_6^3\omega_{11}^3v_1^2v_3^2\omega_{18}^2 +$
$12\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18} - 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18} + 36\omega_6^2c_s^2\omega_{11}^3v_1^2\omega_{18}^2 + 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18}^2 -$
$12\omega_6^2\omega_{22}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 88\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 + 18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18}^2 - 24\omega_6\omega_{22}\omega_{13}\omega_{11}^3v_1^2\omega_{18}^2 +$
$12\omega_6^2\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 + 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^2 - 36\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2)\frac{v_3}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} =$
$(12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 + 18\omega_6\omega_{22}\omega_{13}\omega_{11}^2v_3^2\omega_{18}^2 + 12\omega_6\omega_{13}\omega_{11}^3\omega_{18}^2 - 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2 - 6\omega_6^2\omega_{22}\omega_{11}^2\omega_{18}^2 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2 - 12\omega_6\omega_{11}^3\omega_{18}^2 +$
$18\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_3^2\omega_{18} + 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18}^2 - 36\omega_6\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^2\omega_{13}\omega_{11}^2v_3^2\omega_{18}^2 - 12\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2 + 18\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3 -$
$6\omega_6^2\omega_{11}^3v_3^2\omega_{18}^2 - 12\omega_{22}\omega_{13}\omega_{11}^2v_3^2\omega_{18}^2 + 12\omega_{22}\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{13}\omega_{11}^2v_3^2\omega_{18} - 18\omega_6^2c_s^2\omega_{11}^3\omega_{18}^2 - 2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_3^2\omega_{18}^2 + 12\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2 -$
$12\omega_6\omega_{13}\omega_{11}^3\omega_{18} - 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18} - 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2 - 12\omega_{22}\omega_{13}\omega_{11}^3v_3^2\omega_{18} + 12\omega_6\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2 -$
$36\omega_6^2\omega_{13}c_s^2\omega_{11}^3\omega_{18} + 54\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{11}^2\omega_{18}^2 - 12\omega_6\omega_{22}\omega_{11}^2v_3^2\omega_{18}^2 + 36\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 + 6\omega_6^2\omega_{13}\omega_{11}^3v_3^2\omega_{18}^2 -$
$12\omega_6^2\omega_{22}\omega_{13}\omega_{18}^2 - 18\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18}^2 + 54\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_3^2 - 36\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3 + 6\omega_6^2\omega_{22}\omega_{11}^2v_3^2\omega_{18}^2 +$
$54\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18} - 12\omega_6\omega_{13}\omega_{11}^3v_3^2\omega_{18}^2 - 6\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_3^2\omega_{18} + 36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3 - 18\omega_6^2\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18}^2 +$
$12\omega_6\omega_{11}^3v_3^2\omega_{18}^2 - 12\omega_6\omega_{22}\omega_{13}\omega_{11}^3v_3^2 - \omega_6^2\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6\omega_{22}\omega_{13}\omega_{11}^3v_3^2\omega_{18}^2 + 5\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{13}\omega_{11}^3 + 36\omega_6\omega_{13}c_s^2\omega_{11}^3\omega_{18} -$
$12\omega_6^2\omega_{13}\omega_{11}^2\omega_{18} + 6\omega_6^2\omega_{11}^3\omega_{18}^2 + 6\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3\omega_{18} + 18\omega_6\omega_{22}\omega_{13}\omega_{11}^3v_3^2\omega_{18} - 36\omega_6\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_3^2 - 18\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18} -$
$36\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 + 6\omega_6^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 36\omega_6c_s^2\omega_{11}^3\omega_{18}^2 - 40\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_3^2\omega_{18}^2 + 12\omega_6\omega_{13}\omega_{11}^3v_3^2\omega_{18} -$
$18\omega_6\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18} + 36\omega_6^2\omega_{13}c_s^2\omega_{11}^2\omega_{18} - 36\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{13}\omega_{11}^3\omega_{18} - 12\omega_6^2\omega_{13}\omega_{11}^3v_3^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2 - 6\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 18\omega_6\omega_{22}\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_{22}\omega_{13}\omega_{11}^3v_3^2\omega_{18}^2 + 18\omega_6^2\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2)\frac{c_s^2v_3}{12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (4\omega_6^2\omega_8^2\omega_2^2v_3^2 + 12\omega_6^2\omega_2^2 + 54\omega_6^3c_s^2\omega_8\omega_2 + 18\omega_6^2c_s^2\omega_8\omega_2^2 - 6\omega_6^2\omega_8^2\omega_2 + 12\omega_6^2\omega_8\omega_2v_3^2 + 12\omega_6^3\omega_2 + 36\omega_6^3c_s^2\omega_8^2 + 6\omega_6^3\omega_8\omega_2^2 +$
$36c_s^2\omega_8^2\omega_2^2 - 12\omega_6^3\omega_8v_3^2 - 36\omega_6^2c_s^2\omega_2^2 - 18\omega_6^3\omega_8\omega_2 + 18\omega_6^3\omega_8\omega_2v_3^2 - 12\omega_6^3\omega_2^2 - 36\omega_6^3c_s^2\omega_8 + 12\omega_6^3\omega_2^2v_3^2 + \omega_6^3\omega_8^2\omega_2^2v_3^2 - 4\omega_6^2\omega_8^2\omega_2^2 +$
$36\omega_6^2c_s^2\omega_8\omega_2 - 54\omega_6c_s^2\omega_8^2\omega_2^2 - 12\omega_6^2\omega_8^2v_3^2 - 18\omega_6^3c_s^2\omega_8\omega_2^2 + 18\omega_6^2c_s^2\omega_8^2\omega_2 - 12\omega_8^2\omega_2^2 - 12\omega_6^3\omega_8^2\omega_2v_3^2 - 6\omega_6^2\omega_8\omega_2^2 - 36\omega_6^3c_s^2\omega_2 - 12\omega_6^3\omega_2v_3^2 -$
$12\omega_6^3\omega_8^2 - 18\omega_6\omega_8^2\omega_2^2v_3^2 - 36\omega_6^2c_s^2\omega_8^2 + 5\omega_6^3c_s^2\omega_8^2\omega_2^2 + 12\omega_6^3\omega_8^2\omega_2 + 18\omega_6\omega_8^2\omega_2^2 - 6\omega_6^3\omega_8\omega_2^2v_3^2 + 12\omega_8^2\omega_2^2v_3^2 + 6\omega_6^2\omega_8\omega_2^2v_3^2 - \omega_6^3\omega_8^2\omega_2^2 + 12\omega_6^2\omega_8^2 -$
$12\omega_6^2\omega_2^2v_3^2 + 12\omega_6^3\omega_8^2v_3^2 - 40\omega_6^3c_s^2\omega_8^2\omega_2 + 6\omega_6^2\omega_8^2\omega_2v_3^2 - 12\omega_6^2\omega_8\omega_2 + 12\omega_6^2c_s^2\omega_8^2\omega_2^2 + 36\omega_6^3c_s^2\omega_2^2 + 12\omega_6^3\omega_8)\frac{c_s^2v_3}{12\omega_6^3\omega_8^2\omega_2^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-72\omega_4^2c_s^4\omega_1^2\omega_3^2 - 4\omega_3^2\omega_4^2\omega_1^3v_3^2 - 27\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_3^2 - 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2v_3^2 - 18\omega_3^2c_s^2\omega_1^3\omega_3^2 + 4\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 + 3\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_3^2v_3^2 -$
$36\omega_3\omega_4^2c_s^2\omega_1^2\omega_3^2 + 35\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 - 16\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 28\omega_3\omega_4^2c_s^2\omega_1\omega_3^2v_3^2 - 30\omega_3^2\omega_4^2\omega_1v_1^2\omega_3^2v_3^2 - 108\omega_3^2c_s^4\omega_1^2\omega_3^2 -$
$216\omega_3^2\omega_4^2c_s^2v_1^2\omega_3^2 - 18\omega_4^2c_s^2\omega_1^3\omega_3^2 + 20\omega_3^2\omega_4^2c_s^2\omega_3^2 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 15\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 32\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 138\omega_3^2\omega_4^2c_s^2\omega_1^2v_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 +$
$24\omega_3^2\omega_4^2\omega_1^3v_1^4 - 28\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2v_3^2 - 12\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2v_3^2 + 4\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 + 12\omega_4^2c_s^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2v_3^2 + 74\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 49\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 -$
$27\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3v_3^2 - 52\omega_3^2\omega_4^2c_s^2\omega_1^3 + 16\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 24\omega_4^2c_s^2\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 24\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 25\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 +$
$108\omega_3\omega_4^2c_s^4\omega_2^2\omega_3^2 + 54\omega_3^2c_s^4\omega_1^3\omega_2^2 - 12\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2v_3^2 + 66\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 +$
$9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 54\omega_4^2c_s^4\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2v_1^2\omega_2^3 - 30\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2v_3^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 - 36\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 +$
$96\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 3\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3 - 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 - 42\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2 + 4\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 - 119\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 +$
$36\omega_3^2\omega_4^2v_1^2\omega_2^3v_3^2 - 102\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 4\omega_3^2\omega_4^2\omega_2^3 + 16\omega_3^2\omega_4^2c_s^2\omega_3^2v_3^2 + 32\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 + 4\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 36\omega_3\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 -$
$4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 27\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 + 78\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 12\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 27\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 - 84\omega_3\omega_4^2c_s^4\omega_1\omega_2^2 -$
$20\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 72\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 - 32\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 + 216\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2 + 138\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2^2 - 4\omega_3^2\omega_4^2\omega_2^3v_3^2 +$
$72\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2 - 324\omega_3^2\omega_4^2c_s^2\omega_1^3v_1^2\omega_2 + 18\omega_3^2c_s^2\omega_1^3\omega_2^3v_3^2 - 4\omega_3\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 + 60\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2v_3^2 - 58\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 +$
$16\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 + 108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3 + 72\omega_3^2\omega_4^2c_s^4\omega_1^3 + 36\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2 + 28\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 + 324\omega_3^2\omega_4^2c_s^2\omega_1v_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 +$
$4\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 + 28\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 12\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 48\omega_3^2\omega_4^2\omega_1^3v_1^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 - 60\omega_3^2\omega_4^2v_1^4\omega_2^3 + 18\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2)\frac{v_3}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = 0$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = (-2\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 - 8\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^3\omega_9 + \omega_6^3\omega_{22}\omega_{13}\omega_{11}^3v_3^2\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 - 4\omega_6^2\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9 +$$
$$8\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 5\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9 + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - \omega_6^3\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9 + 2\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 -$$
$$\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 + 4\omega_6^2\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9 + 4\omega_6^2\omega_{22}c_s^2\omega_{11}^3\omega_{18}^2\omega_9 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2 + 2\omega_6^3\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9 +$$
$$\omega_6^2\omega_{22}\omega_{13}^3\omega_{11}^2\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 4\omega_6^2\omega_{13}^2\omega_{11}^3v_3^2\omega_{18}\omega_9 - 3\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 - 4\omega_6^3\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9 + 3\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 -$$
$$4\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2 - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9 + 4\omega_6^3\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9 - 2\omega_6^3\omega_{13}\omega_{11}^3v_3^2\omega_{18}^2\omega_9 - \omega_6^2\omega_{22}\omega_{13}^3\omega_{11}^3v_3^2\omega_{18}^2\omega_9 + \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 -$$
$$2\omega_6\omega_{22}\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9 + 4\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^3\omega_9 + 26\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 3\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9 + 2\omega_6^3\omega_{13}^2\omega_{11}^3v_3^2\omega_{18}^2\omega_9 -$$
$$8\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}\omega_9 - 2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_3^2\omega_{18}^2\omega_9 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_9 + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9 - 4\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^3v_3^2\omega_9 +$$
$$4\omega_6^2\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9 + 11\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9 - 4\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 6\omega_6\omega_{22}\omega_{13}^2\omega_{11}^3v_3^2\omega_{18}\omega_9 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^3\omega_9 - 4\omega_6^3\omega_{13}^2\omega_{11}^3v_3^2\omega_{18}\omega_9 -$$
$$15\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9 + 3\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - 8\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{22}c_s^2\omega_{11}^3\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9 - 4\omega_6^2\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9 +$$
$$2\omega_6\omega_{22}\omega_{13}^2\omega_{11}^3v_3^2\omega_{18}^2\omega_9 - 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9 + 2\omega_6^3\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9 +$$
$$13\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9 + 6\omega_6\omega_{22}\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9 + 7\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}\omega_9 + 4\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 + 9\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^3v_3^2\omega_{18}\omega_9 -$$
$$6\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9 + 8\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^3\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9 - 5\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}v_3^2\omega_{18}^2\omega_9 + 8\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2\omega_9 +$$
$$12\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{18}^2\omega_9 + 4\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18}^2\omega_9 - 4\omega_6^2\omega_{13}^2\omega_{11}^3v_3^2\omega_{18}^2\omega_9 - 9\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^3\omega_{18}\omega_9 - 7\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9 + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_9 -$$
$$3\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^3v_3^2\omega_{18}\omega_9 - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}\omega_9 + 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^3v_3^2\omega_9 - 16\omega_{22}\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}^2\omega_9 - 2\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - 8\omega_6^3\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_9 +$$
$$4\omega_6^2\omega_{13}\omega_{11}^3v_3^2\omega_{18}^2\omega_9 + 4\omega_6^3\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}\omega_9 + 2\omega_6^2\omega_{22}\omega_{13}^2c_s^2\omega_{11}\omega_{18}^2\omega_9 - 4\omega_6^2\omega_{13}\omega_{11}^3\omega_{18}^2\omega_9 - 6\omega_6\omega_{22}\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{18}^2\omega_9 +$$
$$4\omega_6^2\omega_{13}^2c_s^2\omega_{11}^3\omega_{18}\omega_9 + 4\omega_6^3\omega_{13}^2c_s^2\omega_{11}^2\omega_{18}\omega_9 + 2\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2v_3^2\omega_{18}^2\omega_9 - 4\omega_6^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9 + 5\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9)\frac{\rho v_1 v_3}{2\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = 0$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = 0$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = 0$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} =$$
$$(-9\omega_3\omega_1\omega_3^2v_3^2 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 + 6\omega_3\omega_1^2v_1^2\omega_2 - 114\omega_3v_1^2\omega_2^3 + 12\omega_3\omega_1^2\omega_2^2 + 108\omega_3c_s^2\omega_1\omega_2^3 + 12\omega_1^2\omega_2^2v_3^2 + 6\omega_1\omega_2^3 + 84\omega_3c_s^2\omega_1^3 + 36c_s^2\omega_1^2\omega_2^2 -$$
$$50\omega_3\omega_1^2v_1^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 - 66\omega_3c_s^2\omega_2^3 - 12\omega_3\omega_1\omega_2^2v_3^2 - 6\omega_1^3\omega_2v_3^2 - 18c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_1^2\omega_2v_3^2 - 23\omega_3\omega_1^3\omega_2^2 + 12\omega_3\omega_1^3v_3^2 - 66\omega_3\omega_1^2v_1^2\omega_2^2 +$$
$$48\omega_3\omega_1^3v_1^2 - 18c_s^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 + 18\omega_3\omega_1^2\omega_2^2v_3^2 + 141\omega_3\omega_1v_1^2\omega_2^3 - 6\omega_1\omega_2^3v_3^2 + 60\omega_3\omega_1v_1^2\omega_2^2 - 75\omega_3\omega_1^3v_1^2\omega_2 + 12\omega_3\omega_2^3v_3^2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 +$$
$$42\omega_3\omega_2^3 - 9\omega_3\omega_1^3\omega_2v_3^2 - 42\omega_3c_s^2\omega_1^2\omega_2^3 + 50\omega_3\omega_1^3v_1^2\omega_2^2 - 12\omega_3\omega_1\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3 - 60\omega_3\omega_1\omega_2^3 - 12\omega_1^2\omega_2^2)\frac{\rho v_1 v_3}{18\omega_3\omega_1^3\omega_2^3}$$

coefficient $C^{(3)}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = (-24 - 18c_s^2\omega - 12\omega^2 - c_s^2\omega^3 - 108\omega v_3^2 + 8c_s^2\omega^2 + 36\omega + 36\omega^2v_3^2 + 12c_s^2 + 72v_3^2)\frac{c_s^2\rho}{12\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3} = (-12\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18} - 18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 + 6\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2 + 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2 - 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_1^2v_3^2 -$$
$$36\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2 + 36\omega_6^2\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18} + 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2 + 12\omega_6^2c_s^4\omega_{11}^3\omega_{18}^2 - 36\omega_6^2\omega_{22}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 - 36\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18} +$$
$$84\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{13}\omega_{11}^3v_1^2\omega_{18} + 36\omega_6^2c_s^2\omega_{11}^3v_3^2\omega_{18}^2 + 60\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18} - 12\omega_6^3\omega_{13}c_s^4\omega_{11}^3\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2 +$$
$$6\omega_6^3\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18}^2 - 12\omega_6^2\omega_{22}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2 + 36\omega_6^2\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18} + 36\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18} -$$
$$6\omega_6^3\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - 24\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2 - 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} + 24\omega_6\omega_{22}\omega_{13}\omega_{11}^3v_1^2\omega_{18} - 6\omega_6^3c_s^2\omega_{11}^3v_1^2\omega_{18}^2 -$$
$$6\omega_6^3\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18} - 18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2 + 6\omega_6^3c_s^2\omega_{11}^3\omega_{18}^2 + 36\omega_6^2\omega_{11}^3v_1^2v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{13}c_s^4\omega_{11}^2\omega_{18} -$$
$$72\omega_6\omega_{22}\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18} - \omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2 + 24\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 +$$
$$12\omega_6^2\omega_{22}\omega_{11}^2v_1^2\omega_{18}^2 - 24\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18} - 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_1^2\omega_{18} - 12\omega_6^2c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_1^2\omega_{18}^2 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 -$$
$$18\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 36\omega_6^2\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18}^2 + 18\omega_6^3\omega_{22}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2 + 72\omega_6\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{13}c_s^2\omega_{11}^3\omega_{18} +$$
$$36\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} - 54\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2 + 12\omega_6^2\omega_{13}\omega_{11}^3v_1^2\omega_{18}^2 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_1^2 +$$
$$60\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18} + 6\omega_6^3\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 - 12\omega_6^2\omega_{22}c_s^4\omega_{11}^2\omega_{18}^2 + 180\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 12\omega_6^3\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} -$$
$$12\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18} - 144\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{13}\omega_{11}^2v_1^2\omega_{18} -$$
$$36\omega_6^2\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18}^2 - 6\omega_6^3c_s^4\omega_{11}^3\omega_{18}^2 - 24\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18} - 12\omega_6^2\omega_{13}c_s^2\omega_{11}^3\omega_{18} + 24\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{11}^2v_1^2\omega_{18}^2 +$$
$$108\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18} + 72\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18} + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2 + 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2 -$$
$$48\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18}^2 + 18\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 - 24\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} - 72\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18} +$$
$$24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2 - 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18} - 36\omega_6^3\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18} - 84\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 -$$
$$12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18} - 18\omega_6^3\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 - 108\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2 + 18\omega_6^3\omega_{22}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 + 6\omega_6^3\omega_{11}^3v_1^2\omega_{18}^2 - 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 -$$
$$12\omega_6^2\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18}^2 + 6\omega_6^3\omega_{22}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 + 24\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2 - 132\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18} - 12\omega_6^2\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 + 6\omega_6^3\omega_{22}c_s^4\omega_{11}^2\omega_{18}^2 -$$
$$12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18}^2 + 72\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18} - 36\omega_6^3\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18} + 36\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3v_1^2v_3^2 - 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3v_1^2 -$$
$$6\omega_6^3\omega_{13}\omega_{11}^3v_1^2\omega_{18}^2 + 12\omega_6^2\omega_{13}c_s^4\omega_{11}^3\omega_{18} + 78\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18} - 18\omega_6^3c_s^2\omega_{11}^3v_3^2\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{11}^3v_1^2\omega_{18}^2 + 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3\omega_{18} +$$
$$18\omega_6^3\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18}^2 + 18\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{13}\omega_{11}^3v_1^2\omega_{18} - 12\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18}^2 + 36\omega_6^3\omega_{22}\omega_{13}v_1^2v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_1^2 -$$
$$12\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 + 36\omega_6^3\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}c_s^2v_1^2\omega_{18}^2 + 12\omega_6^2\omega_{13}c_s^2\omega_{11}^3v_1^2\omega_{18} + 12\omega_6^3\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18} -$$
$$42\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3v_1^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18} - 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2 -$$
$$18\omega_6^3\omega_{11}^3v_1^2v_3^2\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18} - 36\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3v_1^2v_3^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18} + 12\omega_6^2c_s^2\omega_{11}^3v_1^2\omega_{18}^2 + 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18}^2 +$$

$18\omega_6^3\omega_{13}c_s^2\omega_{11}^3v_3^2\omega_{18}^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{13}c_s^4\omega_{11}^3\omega_{18}^2 + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2v_1^2\omega_{18}^2 -$
$24\omega_6\omega_{22}\omega_{13}\omega_{11}^2v_1^2\omega_{18}^2 + 12\omega_6^2\omega_{13}c_s^2\omega_{11}^3\omega_{18}^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 + 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_1^2v_3^2\omega_{18}^2 + 6\omega_6^3\omega_{22}\omega_{13}c_s^4\omega_{11}\omega_{18}^2)\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = (24\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 + 6\omega_6^3\omega_{13}c_s^2\omega_{11}^2\omega_{18} - 6\omega_6^3c_s^2\omega_{11}^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11} + 36\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2v_3^2 - 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18} -$
$36\omega_6^2\omega_{22}\omega_{11}v_3^2\omega_{18} + 36\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2 + 12\omega_6^3\omega_{13}\omega_{11}^2 - 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11} - \omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18} + 18\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18} + 6\omega_6^3\omega_{13}\omega_{11}\omega_{18} -$
$18\omega_6^3\omega_{13}\omega_{11}v_3^2\omega_{18} + 12\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18} - 36\omega_6^2\omega_{13}\omega_{11}^2v_3^2\omega_{18} - 12\omega_6^3\omega_{13}\omega_{11} + 12\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}^2 + 6\omega_6^3\omega_{11}^2\omega_{18} + 6\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{18} - 18\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18} + 36\omega_6^3\omega_{13}\omega_{11}v_3^2 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11} + 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18} + 12\omega_6^2c_s^2\omega_{11}^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2 + 18\omega_6^3\omega_{13}\omega_{11}^2v_3^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{13}\omega_{18} - 36\omega_6^3\omega_{13}\omega_{11}^2v_3^2 - 12\omega_6^2\omega_{13}\omega_{11}^2 -$
$12\omega_6\omega_{22}\omega_{13}\omega_{11}^2 - 4\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{11}\omega_{18} - 18\omega_6^3\omega_{11}^2v_3^2\omega_{18} + 12\omega_6^2\omega_{13}c_s^2\omega_{11}^2 + 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18} + 12\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2 -$
$12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18} + 12\omega_6^2\omega_{13}\omega_{11}^2\omega_{18} - 36\omega_6\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18} - 12\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{18} + 12\omega_6^3\omega_{13}c_s^2\omega_{11} +$
$18\omega_6^3\omega_{22}\omega_{11}v_3^2\omega_{18} - 72\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2v_3^2 - 12\omega_6^3\omega_{13}c_s^2\omega_{11}^2 - 6\omega_6^3\omega_{22}\omega_{13}c_s^2\omega_{11}\omega_{18} - 6\omega_6^3\omega_{13}\omega_{11}^2\omega_{18} + 72\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_3^2\omega_{18} -$
$12\omega_6^2\omega_{13}c_s^2\omega_{11}^2\omega_{18} - 6\omega_6^3\omega_{13}c_s^2\omega_{11}\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}\omega_{18} + 36\omega_6^2\omega_{13}\omega_{11}^2v_3^2 - 12\omega_6^2\omega_{11}^2\omega_{18} - 36\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18} + 36\omega_6^2\omega_{11}^2v_3^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{13}c_s^2\omega_{11} - 6\omega_6^3\omega_{22}\omega_{11}\omega_{18} + 36\omega_6\omega_{22}\omega_{13}\omega_{11}^2v_3^2 + 18\omega_6\omega_{22}\omega_{13}c_s^2\omega_{11}^2\omega_{18} - 36\omega_6^3\omega_{22}\omega_{13}\omega_{11}v_3^2)\frac{c_s^2\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = (24\omega_6^2\omega_2^2 - 36\omega_8\omega_2^2v_3^2 - 4\omega_6^2c_s^2\omega_8\omega_2^2 + 72\omega_6\omega_2^2v_3^2 - 12\omega_6^2\omega_2^3 + 36\omega_6^2\omega_2v_3^2 + 12\omega_6^2c_s^2\omega_2 - \omega_6^2c_s^2\omega_8\omega_2^3 + 12\omega_6\omega_8\omega_2 - 72\omega_6\omega_2^3v_3^2 -$
$24\omega_6^2c_s^2\omega_2^2 - 12\omega_6\omega_8\omega_2^2 + 36\omega_6\omega_8\omega_2^2v_3^2 + 18\omega_6^2c_s^2\omega_8\omega_2 + 12\omega_8\omega_2^2 + 36\omega_2^3v_3^2 + 12\omega_6^2c_s^2\omega_2^3 - 12\omega_6^2\omega_2 + 12c_s^2\omega_2^3 + 36\omega_6^2\omega_2^3v_3^2 + 12\omega_6c_s^2\omega_8\omega_2^2 +$
$24\omega_6c_s^2\omega_2^2 - 24\omega_6c_s^2\omega_2^3 - 36\omega_6\omega_8\omega_2v_3^2 + 24\omega_6\omega_2^3 - 72\omega_6^2\omega_2^2v_3^2 - 12c_s^2\omega_8\omega_2^2 - 12\omega_2^3 - 24\omega_6\omega_2^2 - 12\omega_6^2c_s^2\omega_8 - 12\omega_6c_s^2\omega_8\omega_2)\frac{c_s^2\rho}{12\omega_6^2\omega_8\omega_2^3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = (-90\omega_3\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 - 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2v_3^2 - 18\omega_3^2\omega_1v_1^2\omega_2^3 + 76\omega_3^2\omega_4c_s^4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 + 9\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 +$
$36\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 - 12\omega_3^2\omega_4\omega_2^3v_3^2 - 42\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 - 30\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 96\omega_3^2\omega_4c_s^2\omega_2^3v_3^2 - 84\omega_3^2\omega_4c_s^2\omega_1\omega_2^2v_3^2 +$
$12\omega_3^2\omega_4\omega_1^2\omega_2v_3^2 + 60\omega_3\omega_4c_s^2\omega_1\omega_2^3v_3^2 - 6\omega_3\omega_4\omega_1^2v_1^2\omega_2^2 + 132\omega_3^2\omega_4c_s^2\omega_1^3v_1^2 - 90\omega_3^2\omega_4\omega_1v_1^2\omega_2^3v_3^2 - 28\omega_3^2\omega_4c_s^4\omega_1\omega_2^2 + 16\omega_3^2\omega_4c_s^4\omega_1^3 -$
$48\omega_3^2\omega_4v_1^4\omega_2^3 + 54\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 + 8\omega_3\omega_4c_s^4\omega_1\omega_2^3 - 48\omega_3^2\omega_4c_s^2\omega_1^2\omega_2v_3^2 + 36\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 + 12\omega_3^2\omega_4\omega_1\omega_2^2v_3^2 - 48\omega_3^2\omega_4\omega_1^3v_1^2 + 24\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 +$
$9\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 - 18\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 48\omega_3^2\omega_4c_s^2\omega_1\omega_2^3v_3^2 - 12\omega_3\omega_4\omega_1^3v_1^4\omega_2 - 18\omega_4\omega_1^2v_1^2\omega_2^3 - 18\omega_3^2\omega_1^2v_1^4\omega_2^2 - 12\omega_3^2\omega_4c_s^2\omega_1^2v_1^2\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 -$
$68\omega_3^2\omega_4c_s^4\omega_2^3 - \omega_3^2\omega_4\omega_1^3\omega_2^2v_3^2 + 54\omega_3^2\omega_4\omega_1v_1^4\omega_2^3 - 54\omega_3c_s^2\omega_1^3v_1^2\omega_2^2 - 18\omega_3\omega_1^2v_1^2\omega_2^3 - 18\omega_3^2\omega_1^3v_1^2\omega_2^2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^3 +$
$54\omega_3\omega_4c_s^2\omega_1^3\omega_2^3v_3^2 + 54\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^2 + 6\omega_3\omega_4\omega_1v_1^4\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 + 6\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 - 216\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 4\omega_3^2\omega_4\omega_2^3 - 18\omega_3\omega_1^3v_1^4\omega_2^2 -$
$18\omega_3^2\omega_1^2v_1^4\omega_2^3 + 32\omega_3^2\omega_4c_s^2\omega_1\omega_2^2 + 12\omega_3^2\omega_4\omega_1\omega_2^3v_3^2 - 90\omega_3^2\omega_4\omega_1^3v_1^2\omega_2v_3^2 - 90\omega_3\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3\omega_4c_s^2\omega_1\omega_2^3 - \omega_3^2\omega_4\omega_1^2\omega_2^3v_3^4 -$
$36\omega_3^2\omega_4\omega_1^3v_1^4\omega_2 - 4\omega_3^2\omega_4\omega_1\omega_2^2 - 54\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 - 144\omega_3^2\omega_4\omega_1v_1^2\omega_2^2v_3^2 + 12\omega_3^2\omega_4\omega_1v_1^4\omega_2^2 - 18\omega_4\omega_1^3v_1^4\omega_2^2 - 6\omega_3^2\omega_4c_s^2\omega_1^3\omega_2v_3^2 + 6\omega_3\omega_4\omega_1^2v_1^4\omega_2^2 -$
$108\omega_3^2\omega_4c_s^2v_1^2\omega_2^3 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2 + 18\omega_3\omega_4c_s^4\omega_1^3\omega_2^3 - 6\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 20\omega_3^2\omega_4c_s^2\omega_1^3 + 30\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2 + 12\omega_3^2\omega_4v_1^2\omega_2^3 - 8\omega_3\omega_4c_s^2\omega_1^3\omega_2 +$
$2\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 + 36\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 36\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2 - 9\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 + \omega_3^2\omega_4\omega_1^3\omega_2^2v_3^4 + 18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2 +$
$\omega_3^2\omega_4\omega_1^2\omega_2^3v_3^2 - 36\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 - 9\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 + 2\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 18\omega_3^2\omega_1v_1^4\omega_2^3 + 216\omega_3^2c_s^2\omega_1\omega_2^3v_3^2 + 12\omega_3^2\omega_4\omega_1^3\omega_2v_3^2 + 72\omega_3^2\omega_4\omega_1^3v_1^2v_3^2 -$
$36\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 - 18\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 + 132\omega_3\omega_4c_s^2\omega_1^2\omega_2^2v_3^2 - 56\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 3\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 -$
$18\omega_3\omega_4c_s^2\omega_1v_1^2\omega_2^3 - 28\omega_3^2\omega_4c_s^4\omega_1^2\omega_2 - 6\omega_3\omega_4\omega_1v_1^2\omega_2^3 + 12\omega_3^2\omega_4\omega_1^2v_1^4\omega_2 + 18\omega_3^2\omega_1^2v_1^2\omega_2^3 + 54\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 + 18\omega_3\omega_1^3v_1^2\omega_2^2 - 18\omega_3\omega_4c_s^2\omega_1^3\omega_2^3 +$
$28\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^2 - 12\omega_3^2\omega_4\omega_1^3v_3^2 - 36\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3v_3^2 + 66\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2v_3^2 - 2\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2 - 54\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^2 + 66\omega_3^2\omega_4\omega_1^3v_1^2\omega_2 +$
$8\omega_3\omega_4c_s^4\omega_1^3\omega_2 + 150\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_2^3 + 12\omega_3^2\omega_4c_s^2\omega_1^3v_3^2 + 18\omega_4\omega_1^3v_1^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 + 108\omega_3^2\omega_4v_1^2\omega_2^3v_3^2 - 14\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 +$
$36\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 + 12\omega_3\omega_4\omega_1^3v_1^2\omega_2 + 180\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2v_3^2 - 14\omega_3^2\omega_4c_s^4\omega_1^3\omega_2 + 18\omega_3^2\omega_1^2v_1^2\omega_2^2 + 18\omega_4\omega_1^2v_1^4\omega_2^3 + 24\omega_3^2\omega_4\omega_1^3v_1^4 + 24\omega_3\omega_4c_s^2\omega_1^3\omega_2v_3^2 +$
$54\omega_4c_s^2\omega_1^2v_1^2\omega_2^3 + 90\omega_3\omega_4c_s^2\omega_1^3v_1^2\omega_2^2 - 126\omega_3\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 + 28\omega_3^2\omega_4c_s^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1^2\omega_2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 + 18\omega_3^2\omega_1^3v_1^4\omega_2^2 - 24\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 +$
$18\omega_3\omega_1^2v_1^4\omega_2^3 - 12\omega_3^2\omega_4c_s^2\omega_1v_1^2\omega_2^2 - 54\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 - 24\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^2 + 32\omega_3^2\omega_4c_s^2\omega_1^2\omega_2 - 174\omega_3^2\omega_4c_s^2\omega_1^3v_1^2\omega_2 + 56\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (-3\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2 + \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + 3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2 - \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18} +$
$\omega_6^2\omega_{19}^2\omega_7\omega_{11}^3v_3^2\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18} + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8v_3^2\omega_{18} + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8v_3^2\omega_{18}^2 + \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} -$
$2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + \omega_6^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8v_3^2\omega_{18}^2 -$
$3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2v_3^2\omega_{18}^2 - 3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8v_3^2\omega_{18}^2 -$
$3\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - \omega_6^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2 - \omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$6\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$3\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 -$
$3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 6\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 -$
$3\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8v_3^2\omega_{18} + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{11}^3\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$
$3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2 + 6\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 3\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18} - 3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} -$
$\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 3\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18} - \omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8v_3^2\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18} +$

$2\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8v_3^2\omega_{18}^2 -$
$3\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8 - \omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2 -$
$2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 - \omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18} + \omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$3\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6^2\omega_7\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18} + 3\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3v_3^2\omega_{18}^2 +$
$\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} - 6\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8v_3^2\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8v_3^2\omega_{18}^2 - 3\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}^2 +$
$\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2 + 3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 -$
$3\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18} + 3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18} - \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + 6\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2 - \omega_6^2\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 +$
$\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2v_3^2\omega_{18}^2 + 3\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2 - \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_{18}^2 +$
$\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - \omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8v_3^2\omega_{18}^2 + 3\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2 +$
$\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8 - 3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} -$
$3\omega_6^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18} - 9\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$\omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18})\frac{v_1v_2v_3}{\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (6\omega_1^2v_2^2\omega_2^2 - 3\omega_1^3v_1^2\omega_2 - 12\omega_1\omega_2^2 - 72c_s^2\omega_1^2\omega_2 + 6\omega_1\omega_2^3 - 3\omega_1v_1^2\omega_2^3 + 2v_2^2\omega_2^3 + 36c_s^2\omega_1^2\omega_2^2 + 4\omega_1^3v_1^2 - 6\omega_1^2v_2^2\omega_2 - 4\omega_2^3v_3^2 -$
$18c_s^2\omega_1^3\omega_2 - 18c_s^2\omega_1\omega_2^3 + 24\omega_1^2\omega_2 + 36c_s^2\omega_1\omega_2^2 - 6\omega_1^2v_1^2\omega_2 + 4\omega_1^3v_3^2 + 4\omega_1^3v_2^2 - 12\omega_1^3 + 6\omega_1^3\omega_2 - 12\omega_1^2\omega_2v_3^2 - 3\omega_1^3v_2^2\omega_2 + 6\omega_1^2v_1^2\omega_2^2 + 36c_s^2\omega_1^3 -$
$3\omega_1v_2^2\omega_2^3 + 2v_1^2\omega_2^3 - 12\omega_1^2\omega_2^2 + 12\omega_1\omega_2^2v_3^2)\frac{v_1v_2v_3}{6\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1}$ **at** $\frac{\partial^4v_1}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = (2\omega_6^3\omega_{19}\omega_7c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$
$8\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2 - 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 -$
$4\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 3\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 + 5\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 +$
$4\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 8\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - \omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 -$
$2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 + 12\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 3\omega_6^3\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 -$
$2\omega_6^3\omega_{19}\omega_7^2\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18} + 4\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 15\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18} + 2\omega_6^3\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + \omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$
$6\omega_6^3\omega_{19}c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18}^2 - 4\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{19}^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 9\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 6\omega_6^3\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18} - 8\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$
$15\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 3\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 3\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 + \omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$
$3\omega_6^3\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 3\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 +$
$2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 - 9\omega_6^3\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 +$
$2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_7\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18} -$
$8\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18} -$
$4\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6^3\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 -$
$\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + \omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 + 9\omega_6^3\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$
$6\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 6\omega_6^3\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18} -$
$6\omega_6^3\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18} + 3\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 5\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18}^2 -$
$2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 4\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 + 4\omega_6^3\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 13\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 -$
$2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 11\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2 +$
$2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 11\omega_6^3\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$
$2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 2\omega_6^3\omega_{19}^2\omega_7c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 +$

$$2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 - \omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2 +$$
$$\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18} + 4\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_5\omega_{18} - 8\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 6\omega_6^3\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 +$$
$$4\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18} - 2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 + 3\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$6\omega_6^3\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18})\frac{\rho v_2v_3}{2\omega_8^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D_xD_yD_z^2}v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D_xD_yD_z^2}v_1}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D_xD_yD_z^2}v_1} = 0$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D_xD_yD_z^2}v_1} = 0$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D_xD_yD_z^2}v_1} = 0$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D_xD_yD_z^2}v_1} = (-24\omega_3\omega_4^2\omega_1^3\omega_2v_3^2 + 48\omega_3^2\omega_4^2\omega_1^3v_3^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 + 108\omega_3^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3\omega_4^2\omega_1^2\omega_2^3v_3^2 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 +$$
$$324\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 180\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 72\omega_4^2\omega_1^2v_2^2\omega_2^3 - 108\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^2 + 324\omega_4^2c_s^2\omega_1^3\omega_2^3 - 120\omega_3^2\omega_4^2c_s^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 -$$
$$144\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 108\omega_3\omega_4\omega_1^3\omega_2^3v_3^2 - 144\omega_3\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 216\omega_4^2c_s^2\omega_1^3\omega_2^2 + 72\omega_4^2\omega_1^3\omega_2^2 - 360\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 +$$
$$72\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 - 60\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 + 336\omega_3^2\omega_4^2c_s^2\omega_1^3 - 36\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 72\omega_4^2\omega_1^2\omega_2^3v_3^2 + 108\omega_3^2\omega_4c_s^2\omega_1\omega_2^3 + 63\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^3 -$$
$$432\omega_4^2c_s^2\omega_1^2\omega_2^3 + 60\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 - 108\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 36\omega_3^2\omega_4\omega_1^3\omega_2^2v_3^2 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 12\omega_3\omega_4^2\omega_1^2\omega_2^2v_3^2 - 108\omega_3^2\omega_1^2\omega_2^3v_3^2 - 189\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 -$$
$$36\omega_3^2\omega_4\omega_1\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 72\omega_3^2\omega_4^2v_1^2\omega_2^3 + 144\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^3 - 72\omega_3\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 - 144\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 - 108\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 -$$
$$20\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 - 36\omega_3^2\omega_4\omega_1^3\omega_2^2v_3^2 + 108\omega_3\omega_4\omega_1^3\omega_2^3 - 60\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^2 + 324\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 +$$
$$36\omega_3\omega_4\omega_1^3\omega_2^2v_3^2 + 24\omega_3^2\omega_4^2\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 48\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 216\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2 + 216\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 36\omega_4^2\omega_1^3v_2^2\omega_2^2 +$$
$$180\omega_3\omega_4\omega_1^2\omega_2^3v_3^2 - 24\omega_3\omega_4^2\omega_1v_2^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 - 96\omega_3^2\omega_4^2v_2^2\omega_2^3 + 432\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2\omega_4\omega_1^2\omega_2^2 + 108\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 +$$
$$36\omega_3^2\omega_4\omega_1^2\omega_2^3v_3^2 + 54\omega_4^2\omega_1^3v_2^2\omega_2^3 - 432\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 - 36\omega_4^2\omega_1^3\omega_2^2v_3^2 + 144\omega_7^2\omega_4\omega_1^2\omega_2^3 - 54\omega_3^2\omega_1^3v_2^2\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_2^2\omega_2 +$$
$$24\omega_3^2\omega_4^2\omega_1\omega_2^2 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_2^3v_3^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3v_3^2 + 72\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2 + 72\omega_3^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 + 48\omega_3\omega_4^2\omega_1^2\omega_2^2 -$$
$$324\omega_3\omega_4c_s^2\omega_1^3\omega_2^3 - 216\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 180\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 + 48\omega_3\omega_4^2\omega_1^3\omega_2 - 144\omega_3^2\omega_4^2\omega_1^3 + 216\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 + 54\omega_3^2\omega_1^3\omega_2^2v_3^2 +$$
$$36\omega_3\omega_4^2\omega_1^3\omega_2^2v_3^2 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 - 63\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2 - 36\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 + 54\omega_4^2\omega_1^3\omega_2^3v_3^2 - 180\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 + 20\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 -$$
$$36\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 - 72\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^2 - 216\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2 + 189\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3)\frac{\rho v_2v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(3)}_{\mathrm{D_xD_yD_z^2}v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D_xD_yD_z^2}v_2} = 0$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D_xD_yD_z^2}v_2} = (-2\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + \omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$9\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$$
$$8\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6\omega_{19}^2\omega_7^3c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} - \omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2 - 8\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 3\omega_6^2\omega_{19}\omega^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18} - 8\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$$
$$\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 6\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 9\omega_6\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$$
$$\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 + 11\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$9\omega_6\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 6\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 - 3\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 + 4\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 + 5\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$3\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 -$$
$$3\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^3\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 5\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18}^2 -$$
$$8\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 6\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 3\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 -$$
$$3\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 - 6\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6\omega_{19}^3\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^3\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5v_3^2\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 13\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$$
$$4\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 15\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2 + 2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$$

$$2\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2+4\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_8^2\omega_5v_3^2\omega_{18}^2-6\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5+2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2+3\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}+$$
$$6\omega_6\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2+\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2-2\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2-2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}+$$
$$2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2+2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2-2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5v_3^2-2\omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2+\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2+$$
$$4\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2-4\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2+2\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}+4\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+$$
$$8\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2-2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}+2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}-\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}+$$
$$4\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2-15\omega_6^2\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2+2\omega_6^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2-6\omega_6\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5+$$
$$4\omega_6^2\omega_{19}\omega_7^3c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2-2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5v_3^2\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2+4\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2+$$
$$2\omega_6\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2-4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2-2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2-11\omega_6\omega_{19}^2\omega_7^3c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2-$$
$$2\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2-2\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5v_3^2\omega_{18}^2-\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5v_3^2\omega_{18}^2-\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2)\frac{\rho v_1v_3}{2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D_xD_yD_z^2}v_2}=C^{(3),\mathrm{MRT1}}_{\mathrm{D_xD_yD_z^2}v_2}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D_xD_yD_z^2}v_2}=0$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D_xD_yD_z^2}v_2}=0$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D_xD_yD_z^2}v_2}=0$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D_xD_yD_z^2}v_2}=(-24\omega_3\omega_4^2\omega_1^3\omega_2v_3^2+48\omega_3^2\omega_4^2\omega_1^3v_3^2+12\omega_3\omega_4^2\omega_1\omega_2^3-36\omega_3\omega_4^2\omega_1^2\omega_2^3v_3^2-20\omega_3^2\omega_4^2\omega_1^3\omega_2^2-144\omega_3\omega_4^2c_s^2\omega_1^3\omega_2-36\omega_3\omega_4\omega_1^2v_1^2\omega_2^3+$$
$$72\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^2+324\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3+180\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2+36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2-108\omega_4^2\omega_1^3\omega_2^3+144\omega_3^2\omega_4^2\omega_1^3v_2^2+324\omega_4^2c_s^2\omega_1^3\omega_2^3-120\omega_3^2\omega_4^2c_s^2\omega_2^3+$$
$$96\omega_3^2\omega_4^2\omega_1^2\omega_2-63\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^3-144\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2-108\omega_3\omega_4\omega_1^3\omega_2^3v_3^2-144\omega_3\omega_4\omega_1^2\omega_2^3-36\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2-216\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2-216\omega_4^2c_s^2\omega_1^3\omega_2^2+$$
$$72\omega_4^2\omega_1^3\omega_2^2-360\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2-60\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3+20\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2-180\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3+144\omega_4^2\omega_1^2\omega_2^3+336\omega_3^2\omega_4^2c_s^2\omega_1^3+216\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2-$$
$$72\omega_4^2\omega_1^2\omega_2^3v_3^2+108\omega_3^2\omega_4c_s^2\omega_1\omega_2^3-432\omega_4^2c_s^2\omega_1^2\omega_2^3-36\omega_4^2\omega_1^3v_1^2\omega_2^2+24\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2+60\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2-72\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2-36\omega_3^2\omega_4\omega_1^3\omega_2^2v_3^2-$$
$$108\omega_3^2\omega_4^2\omega_1^2\omega_2^2+12\omega_3\omega_4^2\omega_1^2\omega_2^2v_3^2-108\omega_3^2\omega_1^2\omega_2^3v_3^2-189\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3-36\omega_3^2\omega_4\omega_1\omega_2^3-24\omega_3\omega_4^2\omega_1v_1^2\omega_2^3-96\omega_3^2\omega_4^2v_1^2\omega_2^3-72\omega_3\omega_4\omega_1^3\omega_2^2+$$
$$72\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2-144\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2+54\omega_4^2\omega_1^3v_1^2\omega_2^3+108\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3-36\omega_3^2\omega_4\omega_1\omega_2^3v_3^2+108\omega_3\omega_4\omega_1^3\omega_2^3+324\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2+144\omega_3^2\omega_4^2\omega_1^3\omega_2+$$
$$20\omega_3^2\omega_4^2\omega_1^2\omega_2^3+36\omega_3\omega_4\omega_1^3\omega_2^2v_3^2-24\omega_3\omega_4^2\omega_1^3v_1^2\omega_2-54\omega_3^2\omega_1^3v_1^2\omega_2^3+24\omega_3^2\omega_4^2\omega_2^3-108\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2-48\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2+63\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^3+$$
$$216\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2-36\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2+180\omega_3\omega_4\omega_1^2\omega_2^3v_3^2-108\omega_3\omega_4^2\omega_1^3\omega_2^2+144\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^3+72\omega_3^2\omega_4^2v_2^2\omega_2^3+432\omega_3\omega_4c_s^2\omega_1^2\omega_2^3+$$
$$36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2-36\omega_3^2\omega_4^2\omega_1\omega_2^3-72\omega_3^2\omega_4\omega_1^2\omega_2^2-108\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3+36\omega_3^2\omega_4\omega_1^2\omega_2^3v_3^2-36\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2-432\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3-20\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3-$$
$$48\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2-36\omega_4^2\omega_1^3\omega_2^2v_3^2+144\omega_3^2\omega_4\omega_1^2\omega_2^3+24\omega_3^2\omega_4^2\omega_1\omega_2^2-60\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^2+63\omega_3\omega_4^2\omega_1^3\omega_2^3+48\omega_3^2\omega_4^2\omega_2^3v_3^2+12\omega_3\omega_4^2\omega_1\omega_2^3v_3^2+$$
$$72\omega_3^2\omega_4\omega_1^3\omega_2^2+48\omega_3\omega_4^2\omega_1^2\omega_2^2+108\omega_3^2\omega_1^2v_1^2\omega_2^3-324\omega_3\omega_4c_s^2\omega_1^3\omega_2^3-216\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2+180\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3-72\omega_4^2\omega_1^2v_1^2\omega_2^3+48\omega_3\omega_4^2\omega_1^3\omega_2-$$
$$144\omega_3^2\omega_4^2\omega_1^3+216\omega_3\omega_4c_s^2\omega_1^3\omega_2^2+54\omega_3^2\omega_1^3\omega_2^3v_3^2+36\omega_3\omega_4^2\omega_1^3\omega_2^2v_3^2-108\omega_3\omega_4^2\omega_1^2\omega_2^3-36\omega_3\omega_4^2c_s^2\omega_1\omega_2^3-63\omega_3^2\omega_4\omega_1^3\omega_2^3+72\omega_3^2\omega_4\omega_1v_1^2\omega_2^3+$$
$$54\omega_4^2\omega_1^3\omega_2^3v_3^2-36\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2-72\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2+36\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^2+24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2+48\omega_3^2\omega_4^2\omega_1^3v_1^2+189\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2)\frac{\rho v_1v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(3)}_{\mathrm{D_xD_yD_z^2}v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D_xD_yD_z^2}v_3}=0$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D_xD_yD_z^2}v_3}=(-\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}+3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2+\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8+\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2-3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}+$$
$$3\omega_6^2\omega_{19}^2\omega_7\omega_{11}^3v_3^2\omega_{18}^2+6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}+3\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8v_3^2\omega_{18}+3\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8v_3^2\omega_{18}^2+\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}-$$
$$6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2-\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}+\omega_6^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2+3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2+3\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8v_3^2\omega_{18}^2-$$
$$9\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2-3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2v_3^2\omega_{18}^2-\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2-3\omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8v_3^2\omega_{18}^2-$$
$$\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}-3\omega_6^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2-\omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2-\omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2+$$
$$2\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2+3\omega_6^2\omega_{19}\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-$$
$$\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2+\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8+2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}+6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2+$$
$$3\omega_6^2\omega_{19}\omega_7\omega_{11}^3\omega_8v_3^2\omega_{18}^2-\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2+\omega_6^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2+\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2-$$
$$\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2-2\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2+2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2+\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2+$$
$$3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2-\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2-\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2+2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_8\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}-\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8-$$
$$\omega_6^2\omega_{19}\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2-2\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-3\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8v_3^2\omega_{18}+\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2+\omega_6^2\omega_{19}\omega_7c_s^2\omega_{11}^3\omega_{18}^2-\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2+$$
$$\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_{18}^2+2\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}-\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-3\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}-\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}-$$
$$\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}+\omega_6\omega_{19}\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2-3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}-3\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8v_3^2\omega_{18}^2-\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}+$$
$$6\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}+3\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2-2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2-\omega_6^2\omega_{19}\omega_7\omega_{11}^3\omega_8\omega_{18}^2-3\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8v_3^2\omega_{18}^2-$$
$$\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8-\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2+3\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8v_3^2\omega_{18}^2-\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}+3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}^2-$$
$$2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2-3\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}^2-3\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8v_3^2\omega_{18}+\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}+$$
$$\omega_6^2\omega_7^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2-2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}-3\omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2-\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2-$$
$$3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}+\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2+\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2-3\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3v_3^2\omega_{18}^2+$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}-2\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2+\omega_6\omega_{19}^2\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-3\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8v_3^2\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2+$$
$$\omega_6^2\omega_{19}^2\omega_7c_s^2\omega_{11}^3\omega_8\omega_{18}^2+\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}^2-\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2-\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2-$$
$$\omega_6\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2+\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}+\omega_6^2\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2\omega_8\omega_{18}+2\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-\omega_6^2\omega_{19}\omega_7c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-$$
$$3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8v_3^2-\omega_6^2\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-\omega_6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3\omega_8\omega_{18}^2-3\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8v_3^2\omega_{18}^2-\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2+$$

$\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2 v_3^2\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8 v_3^2\omega_{18}^2 - \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_{18}^2 +$
$\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 3\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8 v_3^2\omega_{18}^2 - 3\omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8 v_3^2\omega_{18}^2 + \omega_6\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 6\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8 v_3^2\omega_{18}^2 +$
$\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2 v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8 - \omega_6^2\omega_{19}^2\omega_7^2 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} -$
$\omega_6^2\omega_7 c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 v_3^2\omega_{18} - 3\omega_6^2\omega_{19}^2\omega_7^2 c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 3\omega_6\omega_{19}^2\omega_7^2\omega_{11}^3 v_3^2\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$3\omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 v_3^2\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^2 c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2 c_s^2\omega_{11}^3\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8 v_3^2\omega_{18})\frac{\rho v_1 v_2}{\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D_x D_y D_z^2} v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D_x D_y D_z^2} v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D_x D_y D_z^2} v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D_x D_y D_z^2} v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D_x D_y D_z^2} v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D_x D_y D_z^2} v_3} =$
$(3\omega_3\omega_1^3 v_2^2\omega_2^2 + 3\omega_3^2\omega_1^2 v_2^2\omega_2^3 - 2\omega_3\omega_4\omega_1^2\omega_2^2 - 3\omega_3^2\omega_1 v_1^2\omega_2^3 - 12\omega_3^2\omega_4\omega_1^3 + 6\omega_3\omega_1^2\omega_2^3 + \omega_3\omega_4\omega_1 v_2^2\omega_2^3 - 3\omega_3\omega_4\omega_1^2 v_1^2\omega_2^3 - 12\omega_3^2\omega_4\omega_2^3 v_3^2 + 6\omega_3^2\omega_4\omega_1^2 v_1^2\omega_2^2 -$
$4\omega_3^2\omega_4\omega_1 v_2^2\omega_2^2 - 3\omega_4\omega_1^3 v_2^2\omega_2^2 - 3\omega_3^2\omega_4\omega_1^3 v_2^2\omega_2 - 36\omega_3^2\omega_4\omega_1^2\omega_2 v_3^2 + \omega_3\omega_4\omega_1^2 v_1^2\omega_2^2 - 18\omega_3^2 c_s^2\omega_1^3\omega_2^2 + 6\omega_3\omega_4\omega_1^2\omega_2^3 + 4\omega_3\omega_4\omega_1^3\omega_2 + 6\omega_3^2\omega_1\omega_2^3 +$
$3\omega_3^2\omega_1^2 v_2^2\omega_2^2 - 2\omega_3\omega_4\omega_1^3 v_2^2\omega_2 + 36\omega_3^2\omega_4\omega_1\omega_2^2 v_3^2 + 4\omega_3^2\omega_4\omega_1^3 v_1^2 - 3\omega_3^2\omega_4\omega_1 v_2^2\omega_2^3 - 18\omega_3^2\omega_4 c_s^2\omega_1\omega_2^3 + 3\omega_4\omega_1^2 v_1^2\omega_2^3 - 3\omega_3\omega_1^2 v_1^2\omega_2^3 - 3\omega_3^2\omega_1^3 v_1^2\omega_2^2 +$
$18\omega_3^2 c_s^2\omega_1^2\omega_2^3 + 6\omega_3^2\omega_4\omega_1\omega_2^3 + 4\omega_3^2\omega_4 v_2^2\omega_2^3 + 3\omega_3\omega_4\omega_1^3 v_2^2\omega_2^2 - 6\omega_3\omega_4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4\omega_1^2 v_1^2\omega_2 - 4\omega_3^2\omega_4\omega_2^3 - 12\omega_3^2\omega_4 c_s^2\omega_1\omega_2^2 - 6\omega_3\omega_1^3\omega_2^2 + 6\omega_3\omega_4 c_s^2\omega_1\omega_2^3 -$
$4\omega_3^2\omega_4\omega_1\omega_2^2 + 18\omega_3^2 c_s^2\omega_1^2\omega_2^2 + 36\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^2 - 6\omega_4\omega_1^2\omega_2^3 + 3\omega_4\omega_1^2 v_2^2\omega_2^3 + 28\omega_3^2\omega_4 c_s^2\omega_1^3 + 4\omega_3^2\omega_4 v_1^2\omega_2^3 - 12\omega_3\omega_4 c_s^2\omega_1^3\omega_2 - 18\omega_3\omega_4 c_s^2\omega_1^2\omega_2^3 +$
$3\omega_3\omega_4\omega_1^3 v_1^2\omega_2^2 - 3\omega_3^2\omega_1^3 v_2^2\omega_2^2 - 3\omega_3\omega_1^2 v_2^2\omega_2^3 - 12\omega_3^2\omega_4\omega_1^2\omega_2^2 - 18\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2 - 18\omega_4 c_s^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4\omega_1^2 v_2^2\omega_2 + 6\omega_3^2\omega_4\omega_1^3\omega_2 - 18\omega_3^2 c_s^2\omega_1\omega_2^3 +$
$6\omega_3\omega_4 c_s^2\omega_1^2\omega_2^2 + 18\omega_3 c_s^2\omega_1^3\omega_2^2 + 6\omega_3^2\omega_1^3\omega_2^2 + \omega_3\omega_4\omega_1 v_1^2\omega_2^3 - 3\omega_3\omega_4\omega_1^2 v_2^2\omega_2^3 + 3\omega_3^2\omega_1^2 v_1^2\omega_2^3 - 18\omega_3 c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_1^3 v_1^2\omega_2^2 - 6\omega_3^2\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4\omega_1^3 v_3^2 -$
$3\omega_3^2\omega_1 v_2^2\omega_2^3 - 2\omega_3\omega_4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 v_2^2 - 3\omega_3^2\omega_4\omega_1^3 v_1^2\omega_2 + 6\omega_3^2\omega_4\omega_1^2 v_2^2\omega_2^2 - 3\omega_4\omega_1^3 v_1^2\omega_2^2 + 18\omega_4 c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1 v_1^2\omega_2^2 + 18\omega_3\omega_4 c_s^2\omega_1^3\omega_2^2 -$
$2\omega_3\omega_4\omega_1^3 v_1^2\omega_2 + 3\omega_3^2\omega_1^2 v_1^2\omega_2^2 - 6\omega_3^2\omega_1^2\omega_2^2 + \omega_3\omega_4\omega_1^2 v_2^2\omega_2^2 + 20\omega_3^2\omega_4 c_s^2\omega_2^2 + 20\omega_3^2\omega_4\omega_1^2\omega_2 - 3\omega_3^2\omega_4\omega_1 v_1^2\omega_2^3 + 6\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2)\frac{\rho v_1 v_2}{6\omega_3^2\omega_4\omega_1^3\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D_y^2 D_z^2}\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D_y^2 D_z^2}\rho} = (24 + 108c_s^2\omega - \omega^3 + 14\omega^2 + 5c_s^2\omega^3 + 36\omega v_3^2 - 46c_s^2\omega^2 - 36\omega - 14\omega^2 v_3^2 - 72c_s^2 + \omega^3 v_3^2 - 24v_3^2)\frac{c_s^2 v_3}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D_y^2 D_z^2}\rho} = (6\omega_{19}^2\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 6\omega_{19}^2\omega_7^3\omega_{11}^3 v_2^2 + 18\omega_{19}\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^3 v_3^2 - 12\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{11}^3 v_3^2 - 42\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^4\omega_{11}^2 +$
$12\omega_{16}\omega_7^3\omega_{23} c_s^4\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_7^2 c_s^2\omega_{11}^3 v_3^2 + 150\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} c_s^4\omega_{11}^2 - 12\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^3 v_3^2 + 12\omega_{19}^2\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 + 36\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^4 -$
$36\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^3 v_2^2 + \omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^3 v_3^2 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} v_2^2 - 36\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^4\omega_{11} + 24\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 v_2^2 v_3^2 -$
$36\omega_{19}^2\omega_{16}\omega_7^2 c_s^2\omega_{11}^3 v_2^2 + 108\omega_{19}\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^3 v_2^2 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11} v_2^2 - 12\omega_{19}^2\omega_{16}\omega_7\omega_{23} c_s^2\omega_{11}^3 - 36\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{11}^3 v_2^2 -$
$18\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{11}^2 v_2^2 - 24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 v_3^2 - 88\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} c_s^4\omega_{11}^3 - 12\omega_{16}\omega_7^3\omega_{23} c_s^4\omega_{11}^3 + 6\omega_{19}^2\omega_7^3 c_s^2\omega_{11}^3 + 30\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^4\omega_{11}^3 -$
$72\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{11}^3 v_2^2 + 12\omega_{19}^2\omega_{16}\omega_7\omega_{23} c_s^2\omega_{11}^2 - 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} v_2^2 v_3^2 - 12\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{11}^3 v_3^2 + 24\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3^2 +$
$12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^3 v_2^2 v_3^2 - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 36\omega_{19}^2\omega_7^2 c_s^4\omega_{11}^3 - 6\omega_{19}^2\omega_7^3\omega_{23} c_s^2\omega_{11}^2 - 6\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{11}^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^3 v_2^2 v_3^2 -$
$36\omega_{19}\omega_{16}\omega_7^3 c_s^4\omega_{11}^3 - 42\omega_{19}\omega_{16}\omega_7^2\omega_{23} c_s^4\omega_{11}^3 + 36\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{11}^2 v_2^2 + 12\omega_{16}\omega_7^2\omega_{23} c_s^4\omega_{11}^3 - 36\omega_{19}\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^2 v_2^2 + 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^3 v_2^2 -$
$2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^2 v_3^2 + 5\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^4\omega_{11}^3 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^3 v_2^2 v_3^2 + 24\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}^3 v_2^2 - 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 v_2^2 v_3^2 + 12\omega_{19}^2\omega_7^2\omega_{23} c_s^2\omega_{11}^2 +$
$18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^2 v_2^2 - 12\omega_{19}\omega_{16}\omega_7^2 c_s^2\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{11}^2 v_3^2 + 36\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 v_2^2 v_3^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{11}^3 v_2^2 v_3^2 - 18\omega_{19}^2\omega_{16}\omega_7^3 c_s^4\omega_{11}^2 +$
$36\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^2 v_2^2 - 6\omega_{19}^2\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 + 12\omega_{19}^2\omega_{16}\omega_7^2 c_s^2\omega_{11}^3 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^4\omega_{11}^2 + 6\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{11}^3 v_3^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11} v_3^2 -$
$24\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 v_2^2 - 24\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}^3 v_2^2 v_3^2 + 36\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11} v_2^2 + 12\omega_{19}\omega_{16}\omega_7^2 c_s^2\omega_{11}^3 v_3^2 + 36\omega_{19}\omega_{16}\omega_7^3 c_s^4\omega_{11}^2 -$
$12\omega_{19}^2\omega_7^2\omega_{23} c_s^2\omega_{11}^2 v_3^2 + 18\omega_{19}^2\omega_{16}\omega_7^3 c_s^4\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^4\omega_{11} + 36\omega_{19}\omega_{16}\omega_7^2 c_s^2\omega_{11}^3 v_2^2 - 36\omega_{19}^2\omega_7^2\omega_{23} c_s^2\omega_{11}^2 v_2^2 + 12\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^2\omega_{11}^3 -$
$48\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} c_s^4\omega_{11} + 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} v_2^2 - 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^3 v_2^2 + 18\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{11}^3 v_2^2 - 36\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11} v_2^2 +$
$12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^2 v_3^2 + 18\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^2 v_3^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 v_2^2 v_3^2 - 12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} v_2^2 + 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^3 - 18\omega_{19}^2\omega_7^3 c_s^2\omega_{11}^3 v_2^2 -$
$6\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^2 v_2^2 v_3^2 - 12\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^3 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^3 - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3^2 - 72\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^2 v_2^2 + 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 v_2^2 v_3^2 -$
$18\omega_{19}^2\omega_7^3 c_s^4\omega_{11}^3 - 36\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^2 v_2^2 + 18\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^2 v_3^2 - 84\omega_{19}^2\omega_{16}\omega_7\omega_{23} c_s^4\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{11}^2 v_2^2 +$
$18\omega_{19}^2\omega_7^3\omega_{23} c_s^4\omega_{11}^2 - 6\omega_{19}^2\omega_7^3 c_s^2\omega_{11}^3 v_3^2 - 12\omega_{19}^2\omega_7^2 c_s^2\omega_{11}^3 + 72\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^2 v_2^2 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 v_2^2 -$
$18\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_7\omega_{23} c_s^2\omega_{11}^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^2 v_2^2 - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 v_2^2 + 12\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^2 + 18\omega_{19}^2\omega_7^3\omega_{23} c_s^2\omega_{11}^2 v_2^2 -$
$18\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11} v_3^2 + 12\omega_{19}^2\omega_7^2\omega_{11}^3 v_2^2 v_3^2 - 54\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11} v_2^2 + 6\omega_{19}^2\omega_7^3\omega_{23} c_s^2\omega_{11}^2 v_3^2 - 12\omega_{19}^2\omega_7^2\omega_{11}^3 v_2^2 +$
$12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11} - 96\omega_{19}^2\omega_{16}\omega_{23} c_s^4\omega_{11}^3 + 180\omega_{19}^2\omega_{16}\omega_7\omega_{23} c_s^4\omega_{11}^3 + 72\omega_{19}^2\omega_{16}\omega_7\omega_{23} c_s^2\omega_{11}^2 v_2^2 - 6\omega_{19}^2\omega_7^3\omega_{11}^3 v_2^2 v_3^2 + 2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^2 -$
$36\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^3 v_2^2 - 36\omega_{19}^2\omega_{16}\omega_7^2 c_s^4\omega_{11}^3 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^3 v_3^2 + 36\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^3 v_2^2 + 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 v_2^2 + 12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} v_2^2 v_3^2 +$
$12\omega_{19}\omega_{16}\omega_7^3\omega_{11}^3 v_2^2 - 36\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 v_2^2 - 12\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11} - 6\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{11}^3 + 12\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^3 v_3^2 -$
$6\omega_{19}\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^3 v_3^2 + 12\omega_{19}\omega_{16}\omega_7\omega_{23} c_s^4\omega_{11}^3 - 12\omega_{19}^2\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 v_3^2 - 12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^2 + 12\omega_{19}\omega_{16}\omega_7^3 c_s^2\omega_{11}^3 - 18\omega_{19}\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^3 +$
$12\omega_{16}\omega_7^2\omega_{23} c_s^2\omega_{11}^3 + 36\omega_{19}^2\omega_7^2 c_s^2\omega_{11}^3 v_2^2 - \omega_{19}^2\omega_{16}\omega_7^3\omega_{23} c_s^2\omega_{11}^3 + 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} v_2^2 v_3^2 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{11}^2 v_2^2 v_3^2 - 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 v_3^2 +$
$24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 v_2^2 + 36\omega_{19}\omega_{16}\omega_7^2 c_s^4\omega_{11}^3 + 12\omega_{19}^2\omega_7^2 c_s^2\omega_{11}^3 v_3^2 - 36\omega_{19}^2\omega_7^2\omega_{23} c_s^4\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_7\omega_{23} c_s^2\omega_{11}^3 v_3^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11} v_2^2 v_3^2 -$
$24\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 + 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^3 v_2^2 + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 v_2^2 v_3^2 + 6\omega_{19}^2\omega_{16}\omega_7^3 c_s^2\omega_{11}^2)\frac{v_3}{12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D_y^2 D_z^2}\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D_y^2 D_z^2}\rho}$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_3^2 - 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^2v_3^2 + 6\omega_{19}^2\omega_7^2\omega_{23}\omega_{11}^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{23}\omega_{11}^3v_3^2 +$$
$$36\omega_{19}^2\omega_{16}\omega_{23}c_s^2\omega_{11}^3 - 40\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3 + 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 36\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{11}^3 + 12\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^3v_3^2 - 12\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3v_3^2 +$$
$$12\omega_{19}^2\omega_{16}\omega_7\omega_{11}^3 + 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}v_3^2 + 54\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^2 + 6\omega_{19}^2\omega_7^2\omega_{11}^3 - 36\omega_{19}^2\omega_{16}\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2v_3^2 - 18\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}^3 +$$
$$18\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}^3v_3^2 - 18\omega_{19}^2\omega_{16}\omega_7^2c_s^2\omega_{11}^2 - 12\omega_{16}\omega_7\omega_{23}\omega_{11}^3v_3^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^3 + 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^3v_3^2 + 18\omega_{19}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 36\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{11}^3 +$$
$$36\omega_{19}^2\omega_7c_s^2\omega_{11}^3 - 18\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 18\omega_{19}^2\omega_{16}\omega_7^2c_s^2\omega_{11}^3 - 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^3v_3^2 + 12\omega_{19}^2\omega_7\omega_{11}^3v_3^2 + 36\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2 - 6\omega_{19}^2\omega_7^2\omega_{23}\omega_{11}^2 -$$
$$12\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_3^2 + 12\omega_{19}\omega_{16}\omega_{23}\omega_{11}^3 - 12\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^2v_3^2 + 18\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} + 12\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 +$$
$$54\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3 + 36\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{11}^2 - 36\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3 - 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2 + 5\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 6\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 -$$
$$12\omega_{19}^2\omega_7\omega_{23}\omega_{11}^2v_3^2 + 18\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2v_3^2 - 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2v_3^2 + 2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_7\omega_{11}^3v_3^2 + 36\omega_{19}\omega_{16}\omega_7c_s^2\omega_{11}^3 - 18\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3 -$$
$$18\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_7\omega_{23}\omega_{11}^2 - 36\omega_{19}^2\omega_{16}\omega_7c_s^2\omega_{11}^3 - 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_7\omega_{11}^3v_3^2 - 6\omega_{19}^2\omega_7^2\omega_{11}^3v_3^2 + \omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3v_3^2 -$$
$$12\omega_{19}\omega_{16}\omega_7\omega_{11}^3 - \omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 36\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} + 12\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 36\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^3 + 54\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 -$$
$$36\omega_{19}^2\omega_7\omega_{23}c_s^2\omega_{11}^2 - 6\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3v_3^2 - 12\omega_{19}^2\omega_7\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3v_3^2 + 12\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^2 - 36\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} -$$
$$18\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^2 + 36\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 - 2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^3)\frac{c_s^2v_3}{12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (36\omega_6^3\omega_{10}^2c_s^2 + 6\omega_6^2\omega_3\omega_{10}^2v_3^2 - 18\omega_6^3\omega_3^2\omega_{10}c_s^2 + 12\omega_3^2\omega_{10}^2v_3^2 - 12\omega_6^2\omega_3\omega_{10} - 54\omega_6\omega_3^2\omega_{10}^2c_s^2 + 12\omega_6^2\omega_{10}^2 + 6\omega_6^2\omega_3^2\omega_{10}v_3^2 -$$
$$40\omega_6^3\omega_3\omega_{10}^2c_s^2 + 12\omega_6^3\omega_3^2v_3^2 + 12\omega_6^3\omega_{10} - \omega_6^3\omega_3^2\omega_{10}^2 - 12\omega_6^3\omega_{10}^2 + 12\omega_6^3\omega_{10}^2v_3^2 + 6\omega_6^3\omega_3^2\omega_{10} + 36\omega_3^2\omega_{10}^2c_s^2 - 6\omega_6^3\omega_3^2\omega_{10}v_3^2 + 18\omega_6^2\omega_3\omega_{10}^2c_s^2 +$$
$$18\omega_6\omega_3^2\omega_{10}^2 - 18\omega_6\omega_3^2\omega_{10}^2v_3^2 - 6\omega_6^2\omega_3\omega_{10}^2 - 12\omega_3^2\omega_{10}^2 - 12\omega_6^3\omega_3\omega_{10}^2v_3^2 + 18\omega_6^2\omega_3^2\omega_{10}c_s^2 + 36\omega_6^3\omega_3^2c_s^2 + 12\omega_6^2\omega_3^2\omega_{10}^2c_s^2 + 18\omega_6^3\omega_3\omega_{10}v_3^2 - 4\omega_6^2\omega_3^2\omega_{10}^2 +$$
$$12\omega_6^3\omega_3 - 36\omega_6^3\omega_3c_s^2 - 12\omega_6^2\omega_3^2v_3^2 - 18\omega_6^3\omega_3\omega_{10} - 12\omega_6^3\omega_{10}v_3^2 + 36\omega_6^2\omega_3\omega_{10}c_s^2 + \omega_6^3\omega_3^2\omega_{10}^2v_3^2 + 12\omega_6^2\omega_3^2 - 36\omega_6^2\omega_{10}^2c_s^2 + 54\omega_6^3\omega_3\omega_{10}c_s^2 +$$
$$4\omega_6^2\omega_3^2\omega_{10}^2v_3^2 - 12\omega_6^3\omega_3v_3^2 + 12\omega_6^3\omega_3\omega_{10}^2 - 36\omega_6^2\omega_3^2c_s^2 - 36\omega_6^3\omega_{10}c_s^2 + 5\omega_6^3\omega_3^2\omega_{10}^2c_s^2 + 12\omega_6^2\omega_3\omega_{10}v_3^2 - 6\omega_6^2\omega_3^2\omega_{10} - 12\omega_6^2\omega_{10}^2v_3^2 - 12\omega_6^3\omega_3^2)\frac{c_s^2v_3}{12\omega_6^3\omega_3^2\omega_{10}^2}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-72\omega_4^2c_s^4\omega_1^2\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3v_3^2 - 324\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 - 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2v_3^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 4\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 +$$
$$3\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 - 36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 + 35\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 27\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^3 - 16\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 - 28\omega_3\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1^3v_2^2 -$$
$$18\omega_4^2c_s^2\omega_1^3\omega_2^3 + 324\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 20\omega_3^2\omega_4^2c_s^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 15\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 32\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 - 28\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2v_3^2 +$$
$$36\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 + 12\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 12\omega_4^2c_s^2\omega_1^3\omega_2^2 - 60\omega_3^2\omega_4^2v_2^4\omega_2^3 + 74\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 49\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3v_3^2 +$$
$$60\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2v_3^2 - 52\omega_3^2\omega_4^2c_s^2\omega_1^3 - 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 16\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 24\omega_4^2c_s^2\omega_1^2\omega_2^3 - 24\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 25\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2 + 108\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 +$$
$$54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 12\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3 + 27\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 + 8\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 +$$
$$54\omega_4^2c_s^4\omega_1^3\omega_2^3 + 216\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 + 4\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 - 36\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 96\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 3\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3 - 9\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 +$$
$$27\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 36\omega_4^2c_s^4\omega_1^3\omega_2^2 + 138\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 + 4\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 - 119\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 - 102\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 4\omega_3^2\omega_4^2\omega_2^3 +$$
$$16\omega_3^2\omega_4^2c_s^2\omega_2^3v_3^2 - 30\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3v_3^2 + 66\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 32\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 + 4\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 + 12\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 +$$
$$24\omega_3^2\omega_4^2v_2^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 78\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 42\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 12\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 - 12\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2v_3^2 + 4\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 -$$
$$84\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 - 20\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 72\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 - 32\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 27\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4^2\omega_2^3v_3^2 - 30\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2v_3^2 -$$
$$27\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_2^4 + 18\omega_3^2c_s^2\omega_1^3\omega_2^3v_3^2 - 4\omega_3\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 216\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2v_3^2 - 58\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3 +$$
$$36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 + 16\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 + 108\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3 + 72\omega_3^2\omega_4^2c_s^4\omega_1^3 - 36\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 + 28\omega_3\omega_4^2c_s^2\omega_1\omega_2^3 - 138\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 +$$
$$36\omega_3^2\omega_4^2v_2^2\omega_2^3v_3^2 - 27\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 + 28\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 9\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_2^2v_3^2 + 18\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2)\frac{v_3}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^2}$$

coefficient $C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2}$ **at** $\frac{\partial^4v_2}{\partial x_2^2\partial x_3^2}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = 0$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = (4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 8\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3 + \omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2v_3^2 - 7\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 +$$
$$8\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^3 + 5\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2c_s^2\omega_{11}^3 - 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3v_3^2 - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 +$$
$$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^3v_3^2 - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{11}^3 - 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_3^2 + 3\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 -$$
$$\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 - 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 - 4\omega_{19}^2\omega_{16}^2\omega_7\omega_{23}c_s^2\omega_{11}^3 - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3 - \omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3v_3^2 -$$
$$15\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3v_3^2 + 3\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2c_s^2\omega_{11}^3 +$$
$$8\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^3 - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3v_3^2 - 16\omega_{19}^2\omega_{16}^2\omega_{10}\omega_{23}c_s^2\omega_{11}^3 -$$
$$4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11} - \omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 - 24\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 -$$
$$3\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2v_3^2 + 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3 + 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3v_3^2 + 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 + 4\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 -$$
$$8\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 13\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_3^2 + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^3 - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^3v_3^2 -$$
$$3\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3v_3^2 + 26\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 4\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3v_3^2 -$$
$$9\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2 + 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2v_3^2 + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3v_3^2 - 2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2v_3^2 -$$
$$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3c_s^2\omega_{11}^3 - 5\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^3 - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3v_3^2 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^3 + 8\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^3 +$$
$$2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 6\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^2 + 2\omega_{19}^2\omega_{16}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^3 - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^2 - 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2v_3^2 - 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3v_3^2 -$$
$$8\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 11\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^3 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 7\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2v_3^2 + 3\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 +$$
$$4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^2 + 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_3^2 - 5\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}v_3^2 + 2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^3 -$$
$$4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^3 + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2v_3^2 - 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3c_s^2\omega_{11}^3 - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3v_3^2 - 2\omega_{19}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11}^3 + \omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 -$$
$$8\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}c_s^2\omega_{11} + 9\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3v_3^2 - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2v_3^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7\omega_{23}c_s^2\omega_{11}^3)\frac{\rho v_2v_3}{2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3}$$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_2} = (-9\omega_3\omega_1\omega_2^3v_3^3 + 50\omega_3\omega_1^3v_2^2\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 + 12\omega_3\omega_1^2\omega_2^2 + 108\omega_3c_s^2\omega_1\omega_2^3 + 12\omega_1^2\omega_2^2v_3^2 + 6\omega_1\omega_2^3 + 84\omega_3c_s^2\omega_1^3 + 36c_s^2\omega_1^2\omega_2^2 + 141\omega_3\omega_1v_2^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 - 66\omega_3c_s^2\omega_2^3 - 12\omega_3\omega_1\omega_2^2v_3^2 - 6\omega_1^3\omega_2v_3^2 + 48\omega_3\omega_1^3v_2^2 - 18c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_1^2\omega_2v_3^2 - 23\omega_3\omega_1^3\omega_2^2 - 75\omega_3\omega_1^3v_2^2\omega_2 + 12\omega_3\omega_1^3v_3^2 + 60\omega_3\omega_1v_2^2\omega_2^2 - 18c_s^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 + 18\omega_3\omega_1^2\omega_2^2v_3^2 - 50\omega_3\omega_1^2v_2^2\omega_2^3 - 6\omega_1\omega_2^3v_3^2 - 66\omega_3\omega_1^2v_2^2\omega_2^2 + 12\omega_3\omega_2^3v_3^2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 + 42\omega_3\omega_2^3 + 6\omega_3\omega_1^2v_2^2\omega_2 - 9\omega_3\omega_1^3\omega_2v_3^2 - 42\omega_3c_s^2\omega_1^2\omega_2^3 - 12\omega_3\omega_1\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3 - 60\omega_3\omega_1\omega_2^3 - 114\omega_3v_2^2\omega_2^3 - 12\omega_1^2\omega_2^2)\frac{\rho v_2v_3}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}^2_y\mathrm{D}^2_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_3} = (-24 - 18c_s^2\omega - 12\omega^2 - c_s^2\omega^3 - 108\omega v_3^2 + 8c_s^2\omega^2 + 36\omega + 36\omega^2v_3^2 + 12c_s^2 + 72v_3^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_3} = (18\omega_{19}^2\omega_7^3\omega_{23}\omega_{11}^2v_2^2v_3^2 + 6\omega_{19}^2\omega_7^3\omega_{11}^3v_2^2 - 132\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3v_3^2 - 36\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11}^3v_3^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^2 - 36\omega_{19}^2\omega_{16}\omega_7^2c_s^2\omega_{11}^3v_3^2 + 24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^2 + 24\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3v_3^2 + 12\omega_{19}^2\omega_7^2\omega_{23}\omega_{11}^2v_2^2 - 12\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3v_2^2 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_2^2 + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11} + 72\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2v_2^2v_3^2 - 12\omega_{19}^2\omega_{16}\omega_7^2c_s^2\omega_{11}^3v_2^2 + 36\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^3v_2^2 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}v_2^2 - 12\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11}^3v_2^2 - 6\omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{11}^2v_2^2 - 72\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2v_2^2v_3^2 - 4\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^3 + 6\omega_{19}^2\omega_7^3c_s^2\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^3 - 24\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3v_2^2 + 12\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^2 - 54\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}v_2^2v_3^2 + 60\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3v_3^2 + 72\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2v_2^2v_3^2 + 36\omega_{19}\omega_{16}\omega_7^2\omega_{11}^3v_2^2v_3^2 - 36\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2v_2^2v_3^2 + 12\omega_{19}^2\omega_7^2c_s^4\omega_{11}^3 - 6\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 18\omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{11}^2v_3^2 + 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^3v_2^2v_3^2 - 12\omega_{19}\omega_{16}\omega_7^3c_s^4\omega_{11}^3 - 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11}^2v_2^2 - 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2v_2^2 + 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^3v_2^2 - 18\omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{11}^2v_3^2 - \omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^3 - 36\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^3v_2^2v_3^2 + 24\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}^3v_2^2 - 36\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3v_2^2v_3^2 + 12\omega_{19}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2v_2^2 - 12\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{11}^3 + 36\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11}^2v_3^2 + 108\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3v_2^2v_3^2 + 60\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2v_3^2 - 36\omega_{19}\omega_{16}\omega_7^3\omega_{11}^3v_2^2v_3^2 - 6\omega_{19}^2\omega_{16}\omega_7^3c_s^4\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2v_2^2 - 6\omega_{19}^2\omega_7^3\omega_{23}\omega_{11}^2v_2^2 + 12\omega_{19}^2\omega_{16}\omega_7^2c_s^2\omega_{11}^3 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^4\omega_{11}^2 + 18\omega_{19}^2\omega_{16}\omega_7^3c_s^2\omega_{11}^3v_3^2 + 72\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 - 24\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2v_2^2 - 72\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}^3v_2^2v_3^2 + 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11}^2 + 36\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{11}^3v_3^2 + 12\omega_{19}\omega_{16}\omega_7^3c_s^4\omega_{11}^2 - 36\omega_{19}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2v_3^2 + 6\omega_{19}^2\omega_{16}\omega_7^3c_s^4\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{11}^3v_2^2 - 12\omega_{19}^2\omega_7^2\omega_{23}c_s^2\omega_{11}^2v_2^2 - 108\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}v_3^2 - 12\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^3 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^4\omega_{11} + 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2v_2^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^3v_2^2 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}v_2^2 - 144\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2v_3^2 - 36\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3v_2^2v_3^2 - 12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}v_2^2 - 6\omega_{19}^2\omega_7^3c_s^2\omega_{11}^3v_2^2 - 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^2v_2^2v_3^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^3 + 24\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2v_3^2 - 24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2v_2^2 + 36\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3v_2^2v_3^2 - 6\omega_{19}^2\omega_7^3c_s^4\omega_{11}^3 - 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2v_2^2 + 180\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^4\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2v_2^2 - 12\omega_{19}\omega_{16}\omega_7^3\omega_{11}^2v_2^2 + 6\omega_{19}^2\omega_7^3\omega_{23}c_s^4\omega_{11}^2 - 18\omega_{19}^2\omega_7^3c_s^2\omega_{11}^3v_3^2 - 12\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3 + 24\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2v_2^2 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2v_2^2 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3v_2^2 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 - 84\omega_{19}^2\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^2v_3^2 + 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^2v_2^2 - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3v_2^2 + 6\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2v_2^2 - 24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}v_3^2 + 36\omega_{19}^2\omega_7^2\omega_{11}^3v_2^2v_3^2 - 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}v_2^2 + 18\omega_{19}^2\omega_7^3\omega_{23}c_s^2\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_7^2\omega_{11}^3v_2^2 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}c_s^2 - 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 6\omega_{19}^2\omega_{16}\omega_7^3\omega_{11}^2 + 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 36\omega_{19}\omega_7^2\omega_{11}^2v_3^2 + 36\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_3^2 + 72\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_3^2 - 18\omega_{19}\omega_{16}\omega_7^3\omega_{11}v_3^2 + 6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2 + 12\omega_{19}\omega_7^2\omega_{23}\omega_{11} + 18\omega_{19}\omega_{16}\omega_7^3\omega_{11}^2v_3^2 - 72\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2v_3^2 + 6\omega_{19}\omega_7^3\omega_{11}^2 - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}\omega_7^3c_s^2\omega_{11}^2 - \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 18\omega_{19}\omega_7^3\omega_{23}\omega_{11}v_3^2 + 18\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_3^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 12\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} - 6\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11} + 36\omega_{16}\omega_7^2\omega_{11}^2v_3^2 + 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} - 36\omega_{19}\omega_7^2\omega_{23}\omega_{11}v_3^2 - 24\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 4\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11}^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{19}\omega_7^2\omega_{11}^2 - 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 18\omega_{19}\omega_7^3\omega_{11}^2v_3^2 + 36\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2v_3^2 + 12\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 + 36\omega_{16}\omega_7^3\omega_{11}v_3^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23} - 36\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}v_3^2 + 12\omega_{16}\omega_7^2c_s^2\omega_{11}^2)\frac{c_s^2\rho}{12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_3} = (-18\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}v_3^2 - 12\omega_{19}\omega_{16}\omega_{23}c_s^2\omega_{11}^2 - 36\omega_{16}\omega_7^3\omega_{23}\omega_{11}v_3^2 - 36\omega_{16}\omega_7^3\omega_{11}^2v_3^2 + 36\omega_{16}\omega_7\omega_{23}\omega_{11}^2v_3^2 - 12\omega_{16}\omega_7^3\omega_{11} - 12\omega_{19}\omega_7^2\omega_{23}c_s^2\omega_{11} + 12\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_3^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{11}^2 - 12\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11} + 24\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}\omega_7^2c_s^2\omega_{11}^2 - 6\omega_{19}\omega_7^3\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2v_3^2 + 12\omega_{16}\omega_7^3c_s^2\omega_{11} - 12\omega_{16}\omega_7^2\omega_{11}^2 - 12\omega_{16}\omega_7^3c_s^2\omega_{11}^2 + 12\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^2 - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 18\omega_{19}\omega_{16}\omega_7\omega_{23}c_s^2\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{11} - 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{16}\omega_7^3\omega_{11}^2 + 36\omega_{19}\omega_7^2\omega_{11}^2v_3^2 + 36\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_3^2 + 72\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}v_3^2 - 18\omega_{19}\omega_{16}\omega_7^3\omega_{11}v_3^2 + 6\omega_{19}\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_7^2c_s^2\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2 + 12\omega_{19}\omega_7^2\omega_{23}\omega_{11} + 18\omega_{19}\omega_{16}\omega_7^3\omega_{11}^2v_3^2 - 72\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2v_3^2 + 6\omega_{19}\omega_7^3\omega_{11}^2 - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}\omega_7^3c_s^2\omega_{11}^2 - \omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11}^2 + 18\omega_{19}\omega_7^3\omega_{23}\omega_{11}v_3^2 + 18\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_3^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 12\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} - 6\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11} + 36\omega_{16}\omega_7^2\omega_{11}^2v_3^2 + 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11} - 36\omega_{19}\omega_7^2\omega_{23}\omega_{11}v_3^2 - 24\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 - 4\omega_{19}\omega_{16}\omega_7^2\omega_{23}c_s^2\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_7^3c_s^2\omega_{11}^2 - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{16}\omega_7^3\omega_{23}c_s^2\omega_{11} - 12\omega_{19}\omega_7^2\omega_{11}^2 - 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 18\omega_{19}\omega_7^3\omega_{11}^2v_3^2 + 36\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2v_3^2 + 12\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}c_s^2 + 36\omega_{16}\omega_7^3\omega_{11}v_3^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23} - 36\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}v_3^2 + 12\omega_{16}\omega_7^2c_s^2\omega_{11}^2)\frac{\rho}{12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^2_y\mathrm{D}^2_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (-72\omega_6\omega_3^3v_3^2 + 24\omega_6\omega_3^2c_s^2 + 12\omega_3^2\omega_{10} + 36\omega_3^3v_3^2 - 12\omega_6\omega_3\omega_{10}c_s^2 + 12\omega_6^2\omega_3c_s^2 - 12\omega_6\omega_3^2\omega_{10} - 24\omega_6\omega_3^2 - 24\omega_6\omega_3^3c_s^2 - 12\omega_6^2\omega_{10}c_s^2 + 72\omega_6\omega_3^2v_3^2 + 12\omega_3^3c_s^2 - 4\omega_6^2\omega_3^2\omega_{10}c_s^2 + 24\omega_6\omega_3^3 - 36\omega_6\omega_3\omega_{10}v_3^2 - 12\omega_3^3 + 36\omega_6^2\omega_3v_3^2 - 12\omega_6^2\omega_3^3 + 12\omega_6^2\omega_3^3c_s^2 - 72\omega_6^2\omega_3^2v_3^2 + 18\omega_6^2\omega_3\omega_{10}c_s^2 + 24\omega_6^2\omega_3^2 - 12\omega_3^2\omega_{10}c_s^2 + 36\omega_6\omega_3^2\omega_{10}v_3^2 + 36\omega_6^2\omega_3^3v_3^2 - \omega_6^2\omega_3^3\omega_{10}c_s^2 + 12\omega_6\omega_3\omega_{10} - 24\omega_6^2\omega_3^2c_s^2 - 12\omega_6^2\omega_3 - 36\omega_3^2\omega_{10}v_3^2 + 12\omega_6\omega_3^2\omega_{10}c_s^2)\frac{c_s^2\rho}{12\omega_6^2\omega_3^3\omega_{10}}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} =$
$(54\omega_3c_s^2\omega_1^2v_2^2\omega_3^2 + 18\omega_3\omega_1^3v_2^2\omega_2^2 - 90\omega_3\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 + 24\omega_3^2\omega_4\omega_1^3v_2^4 + 18\omega_3^2\omega_1^2v_2^2\omega_3^2 + 76\omega_3^2\omega_4c_s^4\omega_1\omega_3^2 + 4\omega_3^2\omega_4\omega_1^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 + 12\omega_3^2\omega_4\omega_1^2v_2^4\omega_2 - 6\omega_3\omega_4\omega_1v_2^2\omega_3^2 - 12\omega_3^2\omega_4\omega_3^2v_3^2 + 150\omega_3^2\omega_4c_s^2\omega_1v_2^2\omega_3^2 + 36\omega_3^2\omega_4\omega_1v_2^2\omega_2^2 - 72\omega_3^2c_s^4\omega_1^2\omega_3^2 + 18\omega_4\omega_1^3v_2^2\omega_2^2 - 96\omega_3^2\omega_4c_s^2\omega_2^3v_3^2 + 66\omega_3^2\omega_4\omega_1^3v_2^2\omega_2 - 84\omega_3^2\omega_4c_s^2\omega_1\omega_2^2v_3^2 - 54\omega_3^2c_s^2\omega_1^2v_2^2\omega_2 + 12\omega_3^2\omega_4\omega_1^2\omega_2v_3^2 + 90\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 60\omega_3\omega_4c_s^2\omega_1\omega_2^3v_3^2 - 28\omega_3^2\omega_4c_s^4\omega_1\omega_2^2 + 54\omega_4c_s^2\omega_1^2v_2^2\omega_3^2 + 18\omega_3^2\omega_1^2v_2^2\omega_2^2 + 18\omega_4\omega_1^2v_2^4\omega_3^2 + 16\omega_3^2\omega_4c_s^4\omega_1^3 + 12\omega_3\omega_4\omega_1^3v_2^2\omega_2 - 54\omega_3^2c_s^2\omega_1^2v_2^2\omega_3^2 + 8\omega_3\omega_4c_s^4\omega_1\omega_3^2 - 48\omega_3^2\omega_4c_s^2\omega_1^2\omega_2v_3^2 + 12\omega_3^2\omega_4\omega_1\omega_2^2v_3^2 - 174\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2 + 18\omega_3\omega_1^2v_2^2\omega_3^2 - 24\omega_3^2\omega_4\omega_1v_2^2\omega_3^2 + 18\omega_3^2\omega_1^3v_2^4\omega_2^2 - 12\omega_3^2\omega_4c_s^2\omega_1v_2^2\omega_2^2 - 18\omega_3^2\omega_4c_s^2\omega_1\omega_3^2 + 48\omega_3^2\omega_4c_s^2\omega_1\omega_2^3v_3^2 + 30\omega_3^2\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 + 6\omega_3\omega_4\omega_1^2v_2^4\omega_2^2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 - 108\omega_3^2\omega_4c_s^2v_2^2\omega_2^3 - 68\omega_3^2\omega_4c_s^4\omega_2^3 - \omega_3^2\omega_4\omega_1^3\omega_2^2v_3^2 - 36\omega_3\omega_4c_s^2\omega_1^3v_2^2\omega_2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^3 - 9\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^2 + 54\omega_3\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 + 12\omega_3^2\omega_4v_2^2\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 6\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 - 216\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 - 36\omega_3\omega_4\omega_1^2v_2^4\omega_2^2 + 72\omega_3^2\omega_4\omega_1^3v_2^2v_3^2 + 4\omega_3^2\omega_4\omega_2^3 + 18\omega_3^2\omega_1v_2^4\omega_2^2 - 9\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 + 32\omega_3^2\omega_4c_s^2\omega_1\omega_2^2 + 12\omega_3^2\omega_4\omega_1\omega_2^3v_3^2 - 8\omega_3\omega_4c_s^2\omega_1\omega_2^3 + 180\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2v_3^2 - \omega_3^2\omega_4\omega_1^2\omega_2^3v_3^4 + 108\omega_3^2\omega_4v_2^2\omega_2^3v_3^2 - 18\omega_3\omega_4c_s^2\omega_1v_2^2\omega_2^3 - 18\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^2 - 4\omega_3^2\omega_4\omega_1\omega_2^2 - 12\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2 - 6\omega_3^2\omega_4c_s^2\omega_1^3\omega_2v_3^2 - 36\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2 + 18\omega_3\omega_4c_s^4\omega_1^3\omega_2^3 - 6\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 18\omega_4\omega_1^2v_2^2\omega_2^3 - 20\omega_3^2\omega_4c_s^2\omega_1^3 - 18\omega_3^2\omega_1^2v_2^4\omega_2^2 - 12\omega_3\omega_4\omega_1^3v_2^4\omega_2 - 8\omega_3\omega_4c_s^2\omega_1^3\omega_2 - 36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2v_3^2 + 2\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^2 + 54\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 + 36\omega_3\omega_4c_s^2\omega_1^2\omega_2^3 - 18\omega_3^2\omega_1^3v_2^2\omega_2^2 - 54\omega_3c_s^2\omega_1^3v_2^2\omega_2^2 - 18\omega_3\omega_1^2v_2^2\omega_3^2 + 54\omega_3^2\omega_4\omega_1v_2^4\omega_3^2 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 + \omega_3^2\omega_4\omega_1^3\omega_2^2v_3^4 + 18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2 - 18\omega_3^2\omega_1^2v_2^4\omega_2^3 + \omega_3^2\omega_4\omega_1^2\omega_2^3v_3^2 - 18\omega_3\omega_1^3v_2^4\omega_2^2 - 36\omega_3\omega_4c_s^4\omega_1^3\omega_2^2 + 2\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 216\omega_3^2c_s^2\omega_1\omega_2^3v_3^2 + 54\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^2 + 12\omega_3^2\omega_4\omega_1^3\omega_2v_3^2 + 6\omega_3\omega_4\omega_1v_2^4\omega_2^2 - 90\omega_3^2\omega_4\omega_1v_2^2\omega_2^3v_3^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 - 18\omega_4\omega_1^3v_2^4\omega_2^2 + 12\omega_3^2\omega_4\omega_1v_2^4\omega_2^2 + 132\omega_3\omega_4c_s^2\omega_1^2v_2^2v_3^2 - 54\omega_4c_s^2\omega_1^3v_2^2\omega_2^2 - 56\omega_3\omega_4c_s^2\omega_1^2\omega_2^2 - 90\omega_3\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 - 3\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3 - 28\omega_3^2\omega_4c_s^4\omega_1^2\omega_2 - 36\omega_3^2\omega_4\omega_1^3v_2^4\omega_2 + 132\omega_3^2\omega_4c_s^2\omega_1^3v_2^2 + 36\omega_3\omega_4\omega_1^2v_2^2\omega_3^2 - 18\omega_3\omega_4c_s^2\omega_1^3\omega_2^3 + 9\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^2 + 28\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^2 - 12\omega_3^2\omega_4\omega_1^3v_3^2 - 18\omega_3^2\omega_1v_2^2\omega_2^3 - 36\omega_3\omega_4c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3\omega_2^2v_3^2 - 48\omega_3^2\omega_4\omega_1^3v_2^2 + 66\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2v_3^2 - 2\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2 + 8\omega_3\omega_4c_s^4\omega_1^3\omega_2 - 42\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 12\omega_3^2\omega_4c_s^2\omega_1^3v_3^2 - 30\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^3 - 14\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3 + 36\omega_3\omega_4c_s^2\omega_1^3\omega_2^2 - 14\omega_3^2\omega_4c_s^4\omega_1^3\omega_2 + 24\omega_3\omega_4c_s^2\omega_1^3\omega_2v_3^2 - 6\omega_3\omega_4\omega_1^2v_2^2\omega_2^2 - 144\omega_3^2\omega_4\omega_1v_2^2\omega_2^2v_3^2 - 126\omega_3\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 + 28\omega_3^2\omega_4c_s^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1^2\omega_2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 + 24\omega_3^2\omega_4c_s^2\omega_1^2v_2^2\omega_2^2 + 9\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 - 48\omega_3^2\omega_4v_2^4\omega_2^3 - 24\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^2 - 90\omega_3^2\omega_4\omega_1^3v_2^2\omega_2v_3^2 + 32\omega_3^2\omega_4c_s^2\omega_1^2\omega_2 + 36\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 54\omega_3^2c_s^2\omega_1v_2^2\omega_2^3 + 56\omega_3\omega_4c_s^4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_3^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (-4\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 + 4\omega_6c_s^2\omega_{11}^3 - 72\omega_6^2c_s^2\omega_{11}v_3^2\omega_{18} + 20\omega_6\omega_{11}^2v_3^2\omega_{18}^2 - 24\omega_6^2c_s^2\omega_{11}^2v_3^2 + 4\omega_6\omega_{11}^3v_3^2 + 13\omega_6^2\omega_{11}^2v_3^4\omega_{18}^2 + 4\omega_6^2c_s^2\omega_{11}^3\omega_{18} - 8\omega_{11}^3v_3^4\omega_{18} + 4\omega_6c_s^4\omega_{11}\omega_{18}^2 + 8\omega_6^2c_s^4\omega_{11}^2\omega_{18} + 36c_s^2\omega_{11}^2v_3^2\omega_{18}^2 + 4\omega_6^2\omega_{11}^3v_3^4 + 20\omega_6^2\omega_{11}v_3^2\omega_{18} + 13\omega_6^2\omega_{11}^3v_3^2\omega_{18} - 8\omega_{11}^2v_3^2\omega_{18}^2 + 4\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2 + 24\omega_6^2v_3^4\omega_{18}^2 + 36\omega_6^2\omega_{11}v_3^2\omega_{18}^2 + 32\omega_6^2\omega_{11}^2v_3^4\omega_{18} + 72\omega_6c_s^2\omega_{11}v_3^2\omega_{18}^2 - 4\omega_6^2c_s^4\omega_{11}^2 + 84\omega_6c_s^2\omega_{11}^3v_3^2\omega_{18} - 4\omega_6^2c_s^4\omega_{11}^3\omega_{18} - 144\omega_6^2c_s^2\omega_{11}v_3^2\omega_{18}^2 - 8\omega_6^2c_s^2\omega_{18}^2 - 4\omega_6^2\omega_{11}^2v_3^4 + 16\omega_6\omega_{11}^2v_3^2\omega_{18} - 51\omega_6^2c_s^2\omega_{11}^3v_3^2\omega_{18} - 4\omega_6c_s^2\omega_{11}\omega_{18}^2 + 20\omega_6\omega_{11}v_3^4\omega_{18}^2 + 24\omega_6^2c_s^2\omega_{11}^3v_3^2 + 96\omega_6^2c_s^2v_3^2\omega_{18}^2 + 4\omega_6^2c_s^4\omega_{11}^3 + 20\omega_6\omega_{11}^3v_3^4\omega_{18} - 8\omega_6^2c_s^2\omega_{11}^2\omega_{18} + 4c_s^4\omega_{11}^2\omega_{18}^2 - 13\omega_6^2\omega_{11}^2v_3^2\omega_{18}^2 + 8\omega_{11}^3v_3^2\omega_{18} + 8\omega_6c_s^2\omega_{11}^2\omega_{18}^2 + 4\omega_6^2c_s^2\omega_{11}\omega_{18} - 20\omega_6^2\omega_{11}v_3^4\omega_{18} - 84\omega_6c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 4c_s^4\omega_{11}^3\omega_{18} + 51\omega_6^2c_s^2\omega_{11}^2v_3^2\omega_{18}^2 - 12\omega_6^2c_s^4\omega_{11}\omega_{18}^2 - 4\omega_6c_s^4\omega_{11}^3 + 4\omega_6^2\omega_{11}^2v_3^2 - 20\omega_6\omega_{11}^2v_3^4\omega_{18}^2 - 8\omega_6c_s^2\omega_{11}^3\omega_{18} - 4c_s^2\omega_{11}^2\omega_{18}^2 + 8\omega_6^2c_s^4\omega_{18}^2 - 16\omega_6\omega_{11}^2v_3^4\omega_{18} - 8\omega_6c_s^4\omega_{11}^2\omega_{18}^2 - 20\omega_6\omega_{11}v_3^2\omega_{18}^2 - 4\omega_6^2c_s^2\omega_{11}^3 - 4\omega_6^2c_s^4\omega_{11}\omega_{18} + 120\omega_6^2c_s^2\omega_{11}^2v_3^2\omega_{18} - 20\omega_6\omega_{11}^3v_3^2\omega_{18} - 24\omega_6c_s^2\omega_{11}^3v_3^2 - 13\omega_6^2\omega_{11}^3v_3^4\omega_{18} + 12\omega_6^2c_s^2\omega_{11}\omega_{18}^2 + 8\omega_{11}^2v_3^4\omega_{18}^2 - 24\omega_6^2v_3^2\omega_{18}^2 - 4\omega_6^2\omega_{11}^3v_3^2 + 4c_s^2\omega_{11}^3\omega_{18} - 36\omega_6^2\omega_{11}v_3^4\omega_{18}^2 - 48\omega_6c_s^2\omega_{11}^2v_3^2\omega_{18} - 4\omega_6\omega_{11}^3v_3^4 + 4\omega_6^2c_s^2\omega_{11}^2 - 32\omega_6^2\omega_{11}^2v_3^2\omega_{18} + 8\omega_6c_s^4\omega_{11}^3\omega_{18} - 36c_s^2\omega_{11}^3v_3^2\omega_{18})\frac{v_1}{4\omega_6^2\omega_{11}^3\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} =$
$(8\omega_3^2\omega_1\omega_2^2 - 8\omega_3^2\omega_1v_1^2\omega_3^2 + 8\omega_3c_s^2\omega_1v_1^2\omega_3^2 - 48\omega_3^2\omega_1^2v_1^2\omega_2^2v_3^2 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 24\omega_3^2\omega_1^2\omega_2^2v_3^2 - 20\omega_3^2c_s^2\omega_1^3v_1^2\omega_2 - 72\omega_3^2\omega_1\omega_2^2v_3^4 - 84\omega_3^2c_s^4\omega_1^3\omega_2 - 72\omega_3^2v_1^2\omega_2^3v_3^2 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 + 12c_s^2\omega_1^3\omega_2^2 + 8\omega_3^2c_s^2\omega_1v_1^2\omega_2^2 - 12c_s^2\omega_1^3v_1^2\omega_2^2 + 4\omega_3^2\omega_1^3v_1^2\omega_2 - 4\omega_3c_s^2\omega_1^3v_1^2\omega_2 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_1v_1^2\omega_2^2 + 36c_s^4\omega_1^2\omega_2^3 - 8\omega_3c_s^2\omega_1\omega_2^3 + 216\omega_3^2c_s^2\omega_1^3v_3^2 + 8\omega_3^2\omega_1\omega_2^3 - 36\omega_3^2c_s^4\omega_2^3 + 22\omega_3^2c_s^2\omega_1v_1^2\omega_2^2 + 4\omega_3^2\omega_1^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 + 216\omega_3^2c_s^2\omega_1^2\omega_2^2v_3^2 - 36\omega_3^2c_s^4\omega_1^2\omega_2 - 36\omega_3^2\omega_1\omega_2^3v_3^4 - 4\omega_3^2\omega_1^3v_1^2 + 18\omega_3c_s^2\omega_1^3v_1^2\omega_2^2 - 24\omega_3^2\omega_1^2v_1^2\omega_2^3v_3^2 - \omega_3^2\omega_1^3v_1^2\omega_2^2 + 5\omega_3^2c_s^2\omega_1^2\omega_3^2 + 24\omega_3^2\omega_1^2\omega_2^3v_3^2 + 72\omega_3^2c_s^4\omega_1^3 + 56\omega_3^2c_s^2\omega_1^3\omega_2 - 8\omega_3^2\omega_2^3 + 24\omega_3^2\omega_1^3v_1^2v_3^2 - 36c_s^4\omega_1^3\omega_2^2 + 84\omega_3^2\omega_1^3\omega_2v_3^2 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 + 2\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 + 24\omega_3^2\omega_1^3v_1^2\omega_2^2v_3^2 + 24\omega_3^2\omega_1^3v_3^4 - 72\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 324\omega_3^2c_s^2\omega_1^3\omega_2v_3^2 - 12c_s^2\omega_1^3\omega_2^3 - 20\omega_3^2c_s^2v_1^2\omega_2^3 + 24\omega_3^2\omega_2^3v_3^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 + 12c_s^2\omega_1^2v_1^2\omega_2^3 - 48\omega_3^2\omega_1^3v_1^2\omega_2v_3^2 + 72\omega_3^2c_s^2\omega_1^3\omega_2^2v_3^2 - 12\omega_3c_s^4\omega_1^3\omega_2 - 36\omega_3^2\omega_1^3\omega_2v_3^4 - 54\omega_3c_s^4\omega_1^2\omega_2^3 + 24\omega_3^2\omega_1v_1^2\omega_2^2v_3^2 - 4\omega_3^2\omega_1^2\omega_2 + 4\omega_3^2\omega_1^2v_1^2\omega_2 + 20\omega_3^2c_s^2\omega_2^3 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 60\omega_3^2\omega_1\omega_2^3v_3^2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 - 4\omega_3^2c_s^2\omega_1^2v_1^2\omega_2 + 48\omega_3^2\omega_2^3v_3^4 + 108\omega_3^2c_s^2\omega_1\omega_2^3v_3^2 - 48\omega_3^2\omega_1^3v_3^2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 24\omega_3^2\omega_1^3\omega_2^2v_3^2 - 18\omega_3c_s^2\omega_1^3\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 + 48\omega_3^2\omega_1\omega_2^2v_3^2 + \omega_3^2\omega_1^2v_1^2\omega_2^3 - 18\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 + 18\omega_3c_s^2\omega_1^2\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 + 96\omega_3^2\omega_1v_1^2\omega_2^3v_3^2 - 4\omega_3^2\omega_1^3\omega_2 + 4\omega_3c_s^2\omega_1^3\omega_2 + 16\omega_3^2c_s^2\omega_1^3v_1^2 - 2\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^2 + 72\omega_3^2\omega_1^2\omega_2^2v_3^4 + 4\omega_3^2\omega_1^2v_1^2\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 + 4\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_3c_s^2\omega_1^2v_1^2\omega_2^2 - 24\omega_3^2\omega_1^2\omega_2v_3^2 + 8\omega_3^2v_1^2\omega_2^3 + 24\omega_3^2\omega_1^2v_1^2\omega_2v_3^2 + 42\omega_3^2c_s^4\omega_1\omega_2^3 - 216\omega_3^2c_s^2\omega_1\omega_2^2v_3^2 - 52\omega_3^2c_s^2\omega_1^3 - 2\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2)\frac{v_1}{36\omega_3^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1 \partial x_3^3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (-42c_s^2\omega^2 v_3^2 + 36c_s^2\omega - 36v_3^4 + 4\omega^3 v_3^4 + 12c_s^2\omega^3 v_3^2 - 54\omega v_3^2 - 26\omega^2 v_3^4 - 12c_s^2\omega^2 + 36c_s^4 + 54\omega v_3^4 - 36c_s^2 v_3^2 + 26\omega^2 v_3^2 - 54c_s^4\omega - 24c_s^2 + 20c_s^4\omega^2 - 4\omega^3 v_3^2 - c_s^4\omega^3 + 54c_s^2\omega v_3^2 + 36v_3^2)\frac{\rho}{12\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (12\omega_6^3\omega_{11}^2 v_3^2 + 54\omega_6^3 c_s^2\omega_{11}^2 v_3^2\omega_{18} + 12\omega_6\omega_{11}^3 v_3^4\omega_{18}^2 + 6\omega_6^3 c_s^4\omega_{11}^3\omega_{18} - 6\omega_6^2 c_s^2\omega_{11}^2\omega_{18}^2 + 252\omega_6^3 c_s^2 v_3^2\omega_{18}^2 + 6\omega_6^3 c_s^2\omega_{11}^2\omega_{18} + 13\omega_6^2 c_s^4\omega_{11}^3\omega_{18}^2 + 12\omega_6^3 c_s^2\omega_{11}^3 v_3^2 - 81\omega_6^2 c_s^2\omega_{11}^3 v_3^2\omega_{18}^2 + 90\omega_6^3\omega_{11} v_3^2\omega_{18}^2 + 12\omega_6^2\omega_{11}^2 v_3^4\omega_{18}^2 + 18\omega_6^2 c_s^2\omega_{11}^3\omega_{18} + \omega_6^3 c_s^4\omega_{11}^2\omega_{18}^2 + 27\omega_6^3\omega_{11}^3 v_3^2\omega_{18} + 102\omega_6 c_s^2\omega_{11}^3 v_3^2\omega_{18}^2 + 18\omega_6^2\omega_{11}^3 v_3^2\omega_{18}^2 + 12\omega_6^2 c_s^4\omega_{11}^2\omega_{18} + 60\omega_6^3\omega_{11}^2 v_3^4\omega_{18} - 12\omega_6^2\omega_{11}^3 v_3^4 - 48\omega_6^2\omega_{11}^3 v_3^2\omega_{18} - 6\omega_6^3 c_s^2\omega_{11}^3\omega_{18} + 6\omega_6^2 c_s^4\omega_{11}^2\omega_{18}^2 - 12\omega_6^3 c_s^2\omega_{11}^2 v_3^2 + 19\omega_6^3\omega_{11}^2 v_3^4\omega_{18}^2 - 24\omega_6^2\omega_{11}^2 v_3^4\omega_{18} + 36\omega_6^3\omega_{11} v_3^2\omega_{18} - 6\omega_6^3 c_s^4\omega_{11}^2\omega_{18} - 5\omega_6^2 c_s^2\omega_{11}^3\omega_{18}^2 - 12\omega_6 c_s^2\omega_{11}^3 v_3^2\omega_{18} - 4\omega_6^3\omega_{11}^3 v_3^2\omega_{18}^2 - 12\omega_6^3\omega_{11}^3 v_3^2 - 72\omega_6^3 v_3^2\omega_{18}^2 - 18\omega_6^2 c_s^4\omega_{11}^3\omega_{18} - \omega_6^3 c_s^2\omega_{11}^2\omega_{18}^2 - 108\omega_6^2 c_s^2\omega_{11} v_3^2\omega_{18}^2 + 30\omega_6^2 c_s^2\omega_{11}^3 v_3^2\omega_{18} + 12\omega_6^3 c_s^4\omega_{18}^2 + 60\omega_6^3 c_s^2\omega_{11}^2 v_3^2\omega_{18}^2 - 12\omega_6^2 c_s^2\omega_{11}^3 v_3^2 - 24\omega_6\omega_{11}^3 v_3^4\omega_{18} - 12\omega_6^2 c_s^2\omega_{11}^2\omega_{18} - \omega_6^3 c_s^4\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{11}^2 v_3^2\omega_{18}^2 - 90\omega_6^3\omega_{11} v_3^4\omega_{18}^2 + 12\omega_6^3 c_s^2\omega_{11}\omega_{18}^2 - 27\omega_6^3\omega_{11}^3 v_3^4\omega_{18} + 12\omega_6^3\omega_{11}^3 v_3^4 - 48c_s^2\omega_{11}^3 v_3^2\omega_{18}^2 - 24\omega_6 c_s^4\omega_{11}^3\omega_{18}^2 - 18\omega_6^2\omega_{11}^3 v_3^4\omega_{18}^2 - 48\omega_6 c_s^2\omega_{11}^2 v_3^2\omega_{18}^2 - 60\omega_6^3\omega_{11}^2 v_3^2\omega_{18} + 162\omega_6^2 c_s^2\omega_{11}^2 v_3^2\omega_{18}^2 - 12\omega_6\omega_{11}^3 v_3^2\omega_{18}^2 - 12\omega_6^2 c_s^4\omega_{11}\omega_{18}^2 - 21\omega_6^3 c_s^2\omega_{11}^3 v_3^2\omega_{18} - 306\omega_6^3 c_s^2\omega_{11} v_3^2\omega_{18}^2 - 12\omega_6 c_s^2\omega_{11}^3\omega_{18} - 12\omega_6^3 c_s^4\omega_{11}\omega_{18}^2 + 12\omega_6^3 c_s^2\omega_{11}^3 v_3^2\omega_{18}^2 - 36\omega_6^3 c_s^2\omega_{11} v_3^2\omega_{18} + 6\omega_6 c_s^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^3\omega_{11}^2 v_3^4 - 12\omega_6^3 c_s^2\omega_{18}^2 + 12c_s^4\omega_{11}^3\omega_{18}^2 - 12\omega_6^2 c_s^2\omega_{11}^2 v_3^2\omega_{18} + 24\omega_6\omega_{11}^3 v_3^2\omega_{18} + 48\omega_6^2\omega_{11}^3 v_3^4\omega_{18} + 12\omega_6^2 c_s^2\omega_{11}\omega_{18}^2 + 12\omega_6^2\omega_{11}^3 v_3^2 - 19\omega_6^3\omega_{11}^2 v_3^2\omega_{18}^2 - 36\omega_6^3\omega_{11} v_3^4\omega_{18} + 24\omega_6^2\omega_{11}^2 v_3^2\omega_{18} + 4\omega_6^3\omega_{11}^3 v_3^4\omega_{18}^2 + 12\omega_6 c_s^4\omega_{11}^3\omega_{18} + 72\omega_6^3 v_3^4\omega_{18}^2)\frac{\rho}{12\omega_6^3\omega_{11}^3\omega_{18}^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (36\omega_6^3\omega_{11}^2 v_3^2 + 198\omega_6^3 c_s^2\omega_{11}^2 v_3^2\omega_{18} + 6\omega_6^3 c_s^4\omega_{11}^3\omega_{18} - 6\omega_6^2 c_s^2\omega_{11}^2\omega_{18}^2 + 252\omega_6^3 c_s^2 v_3^2\omega_{18}^2 + 6\omega_6^3 c_s^2\omega_{11}^2\omega_{18} + 13\omega_6^2 c_s^4\omega_{11}^3\omega_{18}^2 + 108\omega_6^3 c_s^2\omega_{11}^3 v_3^2 - 3\omega_6^2 c_s^2\omega_{11}^3 v_3^2\omega_{18}^2 + 90\omega_6^3\omega_{11} v_3^2\omega_{18}^2 + 18\omega_6^2 c_s^2\omega_{11}^3\omega_{18} + \omega_6^3 c_s^4\omega_{11}^2\omega_{18}^2 + 39\omega_6^3\omega_{11}^3 v_3^2\omega_{18} - 18\omega_6 c_s^2\omega_{11}^3 v_3^2\omega_{18}^2 + 6\omega_6^2\omega_{11}^3 v_3^2\omega_{18}^2 + 12\omega_6^2 c_s^4\omega_{11}^2\omega_{18} + 72\omega_6^3\omega_{11}^2 v_3^4\omega_{18} - 36\omega_6^2\omega_{11}^3 v_3^4 - 36\omega_6^2\omega_{11}^3 v_3^2\omega_{18} - 6\omega_6^3 c_s^2\omega_{11}^3\omega_{18} + 6\omega_6^2 c_s^4\omega_{11}^2\omega_{18}^2 - 108\omega_6^3 c_s^2\omega_{11}^2 v_3^2 + 19\omega_6^3\omega_{11}^2 v_3^4\omega_{18}^2 + 36\omega_{11}^3 v_3^2\omega_{18} - 6\omega_6^3 c_s^4\omega_{11}^2\omega_{18} - 5\omega_6^2 c_s^2\omega_{11}^3\omega_{18}^2 + 36\omega_6 c_s^2\omega_{11}^3 v_3^2\omega_{18} - 4\omega_6^3\omega_{11}^3 v_3^2\omega_{18}^2 - 36\omega_6^3\omega_{11}^3 v_3^2 - 72\omega_6^3 v_3^2\omega_{18}^2 - 18\omega_6^2 c_s^4\omega_{11}^3\omega_{18} - \omega_6^3 c_s^2\omega_{11}^2\omega_{18}^2 - 36\omega_6^2 c_s^2\omega_{11} v_3^2\omega_{18}^2 + 54\omega_6^2 c_s^2\omega_{11}^3 v_3^2\omega_{18} + 12\omega_6^3 c_s^4\omega_{18}^2 + 60\omega_6^3 c_s^2\omega_{11}^2 v_3^2\omega_{18}^2 - 108\omega_6^2 c_s^2\omega_{11}^3 v_3^2 - 12\omega_6^2 c_s^2\omega_{11}^2\omega_{18} - \omega_6^3 c_s^4\omega_{11}^3\omega_{18}^2 - 90\omega_6^3\omega_{11} v_3^4\omega_{18}^2 + 12\omega_6^3 c_s^2\omega_{11}\omega_{18}^2 - 39\omega_6^3\omega_{11}^3 v_3^4\omega_{18} + 36\omega_6^3\omega_{11}^3 v_3^4 - 24\omega_6 c_s^4\omega_{11}^3\omega_{18}^2 - 6\omega_6^2\omega_{11}^3 v_3^4\omega_{18}^2 - 72\omega_6^3\omega_{11}^2 v_3^2\omega_{18} + 18\omega_6^2 c_s^2\omega_{11}^2 v_3^2\omega_{18}^2 - 12\omega_6^2 c_s^4\omega_{11}\omega_{18}^2 - 99\omega_6^3 c_s^2\omega_{11}^3 v_3^2\omega_{18} - 306\omega_6^3 c_s^2\omega_{11} v_3^2\omega_{18}^2 - 12\omega_6 c_s^2\omega_{11}^3\omega_{18} - 12\omega_6^3 c_s^4\omega_{11}\omega_{18}^2 + 12\omega_6^3 c_s^2\omega_{11}^3 v_3^2\omega_{18}^2 - 108\omega_6^3 c_s^2\omega_{11} v_3^2\omega_{18} + 6\omega_6 c_s^2\omega_{11}^3\omega_{18}^2 - 36\omega_6^3\omega_{11}^2 v_3^4 - 12\omega_6^3 c_s^2\omega_{18}^2 + 12c_s^4\omega_{11}^3\omega_{18}^2 + 36\omega_6^2 c_s^2\omega_{11}^2 v_3^2\omega_{18} + 36\omega_6^2\omega_{11}^3 v_3^4\omega_{18} + 12\omega_6^2 c_s^2\omega_{11}\omega_{18}^2 + 36\omega_6^2\omega_{11}^3 v_3^2 - 19\omega_6^3\omega_{11}^2 v_3^2\omega_{18}^2 - 36\omega_6^3\omega_{11} v_3^4\omega_{18} + 4\omega_6^3\omega_{11}^3 v_3^4\omega_{18}^2 + 12\omega_6 c_s^4\omega_{11}^3\omega_{18} + 72\omega_6^3 v_3^4\omega_{18}^2)\frac{\rho}{12\omega_6^3\omega_{11}^3\omega_{18}^2}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (-12\omega_6 c_s^4\omega_8^2\omega_2^3 + 36\omega_6\omega_8\omega_2^3 v_3^2 - 12\omega_6^3 c_s^2\omega_8\omega_2 + 6\omega_6^3 c_s^4\omega_8\omega_2^3 - 12\omega_6^2 c_s^2\omega_8\omega_2^2 - 36\omega_6 c_s^2\omega_8^2\omega_2^2 v_3^2 - 12c_s^2\omega_8^2\omega_2^3 - 18\omega_6^3 c_s^2\omega_8^2\omega_2 v_3^2 - 90\omega_6\omega_8^2\omega_2^3 v_3^4 - 108\omega_6^2 c_s^2\omega_2^3 v_3^2 - 39\omega_6^3\omega_8\omega_2^3 v_3^4 + 18\omega_6^2 c_s^2\omega_8^2\omega_2^2 v_3^2 - 108\omega_6^3 c_s^2\omega_2^2 v_3^2 - 12\omega_6 c_s^4\omega_8^2\omega_2^2 + 54\omega_6^3 c_s^2\omega_8\omega_2^2 v_3^2 + 6\omega_6^2 c_s^2\omega_8\omega_2^3 - 36\omega_6^3\omega_2^3 v_3^2 - 18\omega_6^3 c_s^4\omega_8\omega_2^2 - 4\omega_6^3\omega_8^2\omega_2^3 v_3^2 + 12\omega_6 c_s^2\omega_8^2\omega_2^3 + 72\omega_8^2\omega_2^3 v_3^4 + 72\omega_6^2\omega_8\omega_2^3 v_3^4 - 306\omega_6 c_s^2\omega_8^2\omega_2^3 v_3^2 + 12\omega_6^3 c_s^4\omega_8\omega_2 + 12\omega_6^2 c_s^4\omega_8\omega_2^2 - 19\omega_6^2\omega_8^2\omega_2^3 v_3^2 + 12c_s^4\omega_8^2\omega_2^3 - 6\omega_6^3 c_s^2\omega_8\omega_2^3 - 36\omega_6^2\omega_2^3 v_3^4 + 36\omega_6^3\omega_2^2 v_3^2 + 6\omega_6^3\omega_8^2\omega_2^2 v_3^2 - 99\omega_6^3 c_s^2\omega_8\omega_2^3 v_3^2 + 12\omega_6 c_s^2\omega_8^2\omega_2^2 + 108\omega_6^3 c_s^2\omega_2^3 v_3^2 + 36\omega_6^3\omega_8\omega_2^2 v_3^4 + 18\omega_6^3 c_s^2\omega_8\omega_2^2 - 6\omega_6^2 c_s^4\omega_8\omega_2^3 + 60\omega_6^2 c_s^2\omega_8^2\omega_2^3 v_3^2 - 108\omega_6 c_s^2\omega_8\omega_2^3 v_3^2 + 19\omega_6^2\omega_8^2\omega_2^3 v_3^4 + 12\omega_6^3 c_s^4\omega_8^2 + 36\omega_6^2\omega_2^3 v_3^2 + \omega_6^2 c_s^4\omega_8^2\omega_2^3 - 72\omega_8^2\omega_2^3 v_3^2 - 72\omega_6^2\omega_8\omega_2^3 v_3^2 - 5\omega_6^3 c_s^2\omega_8^2\omega_2^2 + 12\omega_6^3 c_s^2\omega_8^2\omega_2^3 v_3^2 - 24\omega_6^3 c_s^4\omega_8^2\omega_2 - 36\omega_6^3\omega_8\omega_2^2 v_3^2 + 198\omega_6^2 c_s^2\omega_8\omega_2^3 v_3^2 - 36\omega_6^3\omega_2^2 v_3^4 - 6\omega_6^3\omega_8^2\omega_2^2 v_3^4 + 6\omega_6^2 c_s^4\omega_8^2\omega_2^2 + 90\omega_6\omega_8^2\omega_2^3 v_3^2 + 36\omega_6^3 c_s^2\omega_8\omega_2 v_3^2 - 36\omega_6\omega_8\omega_2^3 v_3^4 + 13\omega_6^3 c_s^4\omega_8^2\omega_2^2 - \omega_6^2 c_s^2\omega_8^2\omega_2^3 + 36\omega_6^3\omega_2^3 v_3^4 + 36\omega_6^2 c_s^2\omega_8\omega_2^2 v_3^2 + 6\omega_6^3 c_s^2\omega_8^2\omega_2 + 4\omega_6^3\omega_8^2\omega_2^3 v_3^4 + 252c_s^2\omega_8^2\omega_2^3 v_3^2 - 6\omega_6^2 c_s^2\omega_8^2\omega_2^2 + 39\omega_6^3\omega_8\omega_2^3 v_3^2 - \omega_6^3 c_s^4\omega_8^2\omega_2^3 - 3\omega_6^3 c_s^2\omega_8^2\omega_2^2 v_3^2)\frac{\rho}{12\omega_6^3\omega_8^2\omega_2^3}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (-108\omega_3\omega_4 c_s^2\omega_1^3\omega_2^2 v_3^2 + 24\omega_3\omega_4^2\omega_1^3\omega_2 v_3^2 - 96\omega_3^2\omega_4^2\omega_1^3 v_3^2 + 264\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2 v_3^2 + 72\omega_3^2\omega_4 c_s^4\omega_1\omega_2^3 + 38\omega_3^2\omega_4^2\omega_1^3\omega_2^2 v_3^4 - 216\omega_3\omega_4^2\omega_1^2\omega_2^3 v_3^2 + 24\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^3 v_3^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2 + 72\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2^3 v_3^2 + 36\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^3 - 2\omega_3^2\omega_4^2 c_s^4\omega_1^3\omega_2^2 + 18\omega_3\omega_4^2 c_s^4\omega_1^3\omega_2^3 + 192\omega_3^2\omega_4^2\omega_2^3 v_3^4 - 12\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^2 + 72\omega_3\omega_4^2 c_s^2\omega_1\omega_2^3 v_3^2 - 24\omega_3\omega_4^2\omega_1\omega_2^3 v_3^4 + 576\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^3 v_3^2 + 117\omega_3^2\omega_4\omega_1^3\omega_2^3 v_3^2 + 24\omega_3^2\omega_4^2 c_s^2 v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2 c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2\omega_4^2 c_s^4\omega_1^3\omega_2^3 - 40\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^2 + 54\omega_4^2\omega_1^3\omega_2^3 v_3^4 - 108\omega_3\omega_4\omega_1^3\omega_2^3 v_3^2 - 288\omega_3^2\omega_4^2\omega_1\omega_2^3 v_3^4 + 12\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^3 - 56\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2 - 36\omega_3^2\omega_4\omega_1^2\omega_2^2 v_3^4 + 336\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^2 v_3^2 + 144\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2 v_3^2 + 204\omega_3^2\omega_4^2\omega_1^3\omega_2 v_3^2 + 288\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^2 v_3^2 + 54\omega_3^2\omega_1^3\omega_2^2 v_3^4 + 144\omega_3^2\omega_4^2\omega_1^3 v_1^2 v_3^2 + 108\omega_3\omega_4^2\omega_1^3\omega_2^2 v_3^4 + 36\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^2 - 36\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2 - 36\omega_3\omega_4^2 c_s^4\omega_1^3\omega_2^2 - 297\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^2 v_3^2 - 40\omega_3^2\omega_4^2 c_s^2\omega_1^3 - 180\omega_3\omega_4\omega_1^2\omega_2^3 v_3^4 + 72\omega_4^2\omega_1^2\omega_2^3 v_3^2 + 72\omega_3\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^3 + 264\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_3^2 - 72\omega_3^2\omega_4 c_s^2\omega_1\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^2 - 216\omega_4^2 c_s^2\omega_1^2\omega_2^3 v_3^2 - 36\omega_3\omega_4^2 c_s^4\omega_1^2\omega_2^3 + 16\omega_3\omega_4^2 c_s^4\omega_1^3\omega_2 + 144\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^2 v_3^2 + 24\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2 - 36\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 60\omega_3\omega_4^2\omega_1^2\omega_2^2 v_3^2 + 20\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2^2 + 108\omega_3^2\omega_1^2\omega_2^3 v_3^2 - 18\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^3 + 168\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2^2 v_3^2 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 v_3^4 + 324\omega_3\omega_4 c_s^2\omega_1^3\omega_2^3 v_3^2 + 24\omega_3^2\omega_4^2\omega_1^3\omega_2^3 v_3^4 + 48\omega_3^2\omega_4^2 v_1^2\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2 v_3^2 + 240\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^2 + 64\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2 + 108\omega_3^2\omega_4 c_s^2\omega_1^3\omega_2^2 v_3^2 - 324\omega_3^2 c_s^2\omega_1^2\omega_2^3 v_3^2 + 40\omega_3\omega_4^2 c_s^4\omega_1^2\omega_2^2 - 297\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^3 v_3^2 - 48\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^3 - 117\omega_3\omega_4^2\omega_1^3\omega_2^3 v_3^4 + 72\omega_3^2\omega_4\omega_1\omega_2^3 v_3^2 + 48\omega_3\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2^2 + 288\omega_3^2\omega_4\omega_1^2\omega_2^3 v_3^4 - 852\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^3 v_3^2 + 36\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2^2 - 96\omega_3^2\omega_4^2 c_s^2\omega_1^2 v_1^2\omega_2 + 86\omega_3^2\omega_4^2 c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 432\omega_3^2\omega_4^2 v_1^2\omega_2^2 v_3^2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2\omega_4^2 c_s^4\omega_1^3\omega_2 + 36\omega_3\omega_4\omega_1^3\omega_2^2 v_3^2 + 96\omega_3^2\omega_4^2\omega_1\omega_2^2 v_3^4 - 36\omega_4^2\omega_1^3\omega_2^2 v_3^4 - 16\omega_3^2\omega_4^2\omega_2^3 + 432\omega_3^2\omega_4^2 c_s^2\omega_2^3 v_3^2 - 60\omega_3\omega_4^2\omega_1^2\omega_2^2 v_3^4 + 80\omega_3^2\omega_4^2 c_s^4\omega_2^3 - 108\omega_3^2\omega_1^2\omega_2^3 v_3^4 - 108\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^2 v_3^2 - 144\omega_3^2\omega_4^2\omega_1^2\omega_2 v_3^2 + 648\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^3 v_3^2 + 24\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^3 v_3^2 - 24\omega_3^2\omega_4^2\omega_1^3\omega_2^3 v_3^2 - 96\omega_3\omega_4^2 c_s^2\omega_1 v_1^2\omega_2^3 + 180\omega_3\omega_4\omega_1^2\omega_2^3 v_3^2 - 72\omega_4^2\omega_1^2\omega_2^3 v_3^4 + 16\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3^2\omega_4\omega_1^3\omega_2^2 v_3^4 - 172\omega_3^2\omega_4^2 c_s^4\omega_1\omega_2^3 - 288\omega_3^2\omega_4\omega_1^2\omega_2^3 v_3^2 - 108\omega_4^2 c_s^2\omega_1^3\omega_2^2 v_3^2 + 72\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 + 48\omega_3\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2 - 36\omega_3\omega_4\omega_1^3\omega_2^2 v_3^4 - 144\omega_3^2\omega_4^2\omega_1\omega_2^2 v_3^2 + 16\omega_3\omega_4^2 c_s^4\omega_1\omega_2^3 + 36\omega_4^2\omega_1^3\omega_2^2 v_3^2 - 492\omega_3^2\omega_4^2 c_s^2\omega_1^3\omega_2 v_3^2 - 144\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^4 + 16\omega_3^2\omega_4^2 c_s^4\omega_1\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 174\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^3 v_3^2 + 18\omega_3^2\omega_4 c_s^4\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_1^2 + 144\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2^2 v_3^2 - 12\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^2 + 117\omega_3^2\omega_1^3\omega_2^3 v_3^2 - 72\omega_3^2\omega_4\omega_1\omega_2^3 v_3^4 - 48\omega_3^2\omega_4^2\omega_2^3 v_3^2 + 24\omega_3\omega_4^2\omega_1\omega_2^3 v_3^2 - 117\omega_3^2\omega_4\omega_1^3\omega_2^3 v_3^4 + 48\omega_3^2\omega_4^2 c_s^2\omega_1 v_1^2\omega_2^2 - 12\omega_3^2\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2 + 162\omega_3^2 c_s^2\omega_1^3\omega_2^3 v_3^2 - 108\omega_3^2\omega_4 c_s^2\omega_1^2\omega_2^2 v_3^2 - 24\omega_3\omega_4^2\omega_1^3\omega_2 v_3^4 + 48\omega_3^2\omega_4^2\omega_1^3 v_3^4 - 72\omega_3\omega_4^2 c_s^2\omega_1^3\omega_2 v_3^2 - 288\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 v_3^2 - 86\omega_3^2\omega_4^2\omega_1^3\omega_2^2 v_3^2 + 216\omega_3\omega_4^2\omega_1^2\omega_2^3 v_3^4 - 72\omega_3\omega_4^2 c_s^2\omega_1^3 v_1^2\omega_2^2 + 48\omega_3^2\omega_4^2 c_s^2\omega_1\omega_2^2 + 468\omega_3\omega_4^2 c_s^2\omega_1^2\omega_2^3 v_3^2 - 492\omega_3^2\omega_4^2 c_s^2\omega_1^2\omega_2^2 v_3^2 - 72\omega_3^2\omega_4 c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 108\omega_3^2\omega_4^2\omega_1^3\omega_2 v_3^4 - 54\omega_3^2\omega_1^3\omega_2^3 v_3^2 + 32\omega_3^2\omega_4^2 c_s^4\omega_1^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 v_3^2 - 16\omega_3\omega_4^2 c_s^2\omega_1\omega_2^3 + 40\omega_3^2\omega_4^2\omega_1^2\omega_2^2 v_3^4 - 12\omega_3^2\omega_4^2 c_s^2\omega_1 v_1^2\omega_2^3 - 540\omega_3\omega_4 c_s^2\omega_1^2\omega_2^3 v_3^2 - 54\omega_4^2\omega_1^3\omega_2^3 v_3^2 + 108\omega_3\omega_4\omega_1^3\omega_2^2 v_3^4 +$$

$96\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2 - 32\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 24\omega_3^2\omega_4^2\omega_1^3v_1^2 - 18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 + 162\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_3^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} =$
$(25\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 + 24\omega_6^2\omega_{11}\omega_{18} - 16\omega_6c_s^2\omega_{11}^3 - 68\omega_6\omega_{11}^2v_3^2\omega_{18}^2 - 16\omega_6\omega_{11}^3v_3^2 + 16\omega_6\omega_{11}^2\omega_{18} - 25\omega_6^2c_s^2\omega_{11}^3\omega_{18} - 32\omega_6^2\omega_{18}^2 - 64\omega_6^2\omega_{11}v_3^2\omega_{18} -$
$43\omega_6^2\omega_{11}^3v_3^2\omega_{18} + 28\omega_{11}^2v_3^2\omega_{18}^2 - 120\omega_6^2\omega_{11}v_3^2\omega_{18}^2 + 28\omega_6\omega_{11}^2\omega_{18}^2 + 12\omega_{11}^3\omega_{18} + 48\omega_6^2c_s^2\omega_{18}^2 - 48\omega_6\omega_{11}^2v_3^2\omega_{18} + 8\omega_6\omega_{11}^3 + 32\omega_6c_s^2\omega_{11}\omega_{18}^2 +$
$48\omega_6^2\omega_{11}\omega_{18}^2 + 56\omega_6^2c_s^2\omega_{11}^2\omega_{18} - 12\omega_{11}^2\omega_{18}^2 - 28\omega_6\omega_{11}^3\omega_{18} + 43\omega_6^2\omega_{11}^2v_3^2\omega_{18}^2 - 28\omega_{11}^3v_3^2\omega_{18} - 44\omega_6c_s^2\omega_{11}^2\omega_{18}^2 - 8\omega_6^2\omega_{11}^3 - 32\omega_6^2c_s^2\omega_{11}\omega_{18} -$
$17\omega_6^2\omega_{11}^2\omega_{18}^2 - 24\omega_6\omega_{11}\omega_{18}^2 + 17\omega_6^2\omega_{11}^3\omega_{18} - 16\omega_6^2\omega_{11}^2v_3^2 + 8\omega_6^2\omega_{11}^2 + 44\omega_6c_s^2\omega_{11}^3\omega_{18} + 20c_s^2\omega_{11}^2\omega_{18}^2 + 64\omega_6\omega_{11}v_3^2\omega_{18}^2 + 16\omega_6^2c_s^2\omega_{11}^3 + 68\omega_6\omega_{11}^3v_3^2\omega_{18} -$
$16\omega_6c_s^2\omega_{11}^2\omega_{18} - 40\omega_6^2\omega_{11}^2\omega_{18} - 72\omega_6^2c_s^2\omega_{11}\omega_{18}^2 + 80\omega_6^2v_3^2\omega_{18}^2 + 16\omega_6^2\omega_{11}^3v_3^2 - 20c_s^2\omega_{11}^3\omega_{18} - 16\omega_6^2c_s^2\omega_{11}^2 + 104\omega_6^2\omega_{11}^2v_3^2\omega_{18})\frac{\rho v_1v_3}{4\omega_6^2\omega_{11}^3\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = (-66\omega_3\omega_1\omega_2^3v_3^2 - 54\omega_3c_s^2\omega_1\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 6\omega_3\omega_1^2v_1^2\omega_2 + 27c_s^2\omega_1^3\omega_2^2 - 6\omega_1^3v_1^2\omega_2 - 24\omega_3v_1^2\omega_2^3 - 51\omega_3\omega_1^2\omega_2^2 +$
$27\omega_3c_s^2\omega_1\omega_2^3 - 12\omega_1\omega_2^3 + 12\omega_1v_1^2\omega_2^3 + 84\omega_3c_s^2\omega_1^3 - 18c_s^2\omega_1^2\omega_2^2 - 5\omega_3\omega_1^2v_1^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 - 12\omega_3c_s^2\omega_2^3 - 120\omega_3\omega_1\omega_2^2v_3^2 - 18c_s^2\omega_1^3\omega_2 +$
$9\omega_1^3v_1^2\omega_2^2 - 27c_s^2\omega_1^2\omega_2^3 - 12\omega_3\omega_1^2\omega_2v_3^2 - 5\omega_3\omega_1^3\omega_2^2 + 48\omega_3\omega_1^3v_3^2 - 9\omega_3\omega_1^2v_1^2\omega_2^2 + 12\omega_3\omega_1^3v_1^2 + 36c_s^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 + 132\omega_3\omega_1^2\omega_2^2v_3^2 +$
$27\omega_3\omega_1v_1^2\omega_2^3 - 9\omega_1^3\omega_2^2 + 6\omega_3\omega_1v_1^2\omega_2^2 - 18\omega_3\omega_1^3v_1^2\omega_2 + 84\omega_3\omega_2^3v_3^2 + 15\omega_3c_s^2\omega_1^3\omega_2^2 - 12\omega_3\omega_2^3 - 66\omega_3\omega_1^3\omega_2v_3^2 - 15\omega_3c_s^2\omega_1^2\omega_2^3 + 5\omega_3\omega_1^3v_1^2\omega_2^2 +$
$42\omega_3\omega_1\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 6\omega_1^3\omega_2 + 9\omega_1^2\omega_2^3 - 6\omega_1^2v_1^2\omega_2^2 - 36\omega_3\omega_1^3 + 3\omega_3\omega_1\omega_2^2 + 81\omega_3c_s^2\omega_1^2\omega_2^2 - 9\omega_1^2v_1^2\omega_2^3 + 6\omega_1^2\omega_2^3)\frac{\rho v_1v_3}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4 \rho}{\partial x_2\partial x_3^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} =$
$(4\omega_{19}\omega_7^2c_s^2\omega_{11}^3 - 48\omega_{19}\omega_7c_s^2\omega_{11}^2v_3^2 - 4\omega_{19}^2\omega_7c_s^2\omega_{11} + 20\omega_{19}^2\omega_7\omega_{11}v_3^4 + 96\omega_{19}^2\omega_7^2c_s^2v_3^2 + 4\omega_{19}^2\omega_7^2c_s^4\omega_{11}^2 + 36\omega_{19}^2\omega_7^2\omega_{11}v_3^2 + 4\omega_{19}c_s^2\omega_{11}^3 - 24\omega_7^2c_s^2\omega_{11}^2v_3^2 +$
$13\omega_{19}^2\omega_7^2\omega_{11}^2v_3^4 + 8\omega_{19}\omega_{11}^3v_3^2 + 4\omega_7^2\omega_{11}^2v_3^2 - 4\omega_7c_s^4\omega_{11}^3 + 20\omega_{19}\omega_7\omega_{11}^3v_3^4 - 8\omega_{19}\omega_7^2c_s^2\omega_{11}^2 + 36\omega_{19}^2c_s^2\omega_{11}^2v_3^2 + 13\omega_{19}\omega_7^2\omega_{11}^3v_3^2 - 84\omega_{19}^2\omega_7c_s^2\omega_{11}^2v_3^2 +$
$8\omega_{19}^2\omega_7^2c_s^4 + 20\omega_{19}^2\omega_7\omega_{11}^2v_3^2 - 4\omega_7^2c_s^2\omega_{11}^3 + 24\omega_7^2c_s^2\omega_{11}^3v_3^2 - 144\omega_{19}^2\omega_7^2c_s^2\omega_{11}v_3^2 + 4\omega_{19}^2c_s^4\omega_{11}^2 + 4\omega_{19}\omega_7^2c_s^2\omega_{11} - 20\omega_{19}\omega_7^2\omega_{11}v_3^4 + 84\omega_{19}\omega_7c_s^2\omega_{11}^3v_3^2 -$
$12\omega_{19}^2\omega_7^2c_s^4\omega_{11} - 32\omega_{19}\omega_7^2\omega_{11}^2v_3^2 + 8\omega_{19}\omega_7c_s^4\omega_{11}^3 + 8\omega_{19}^2\omega_{11}^2v_3^4 + 4\omega_7^2c_s^2\omega_{11}^2 - 4\omega_7\omega_{11}^3v_3^4 + 24\omega_{19}^2\omega_7^2v_3^4 - 4\omega_7^2\omega_{11}^3v_3^2 - 16\omega_{19}\omega_7\omega_{11}^2v_3^4 + 8\omega_{19}^2\omega_7c_s^2\omega_{11}^2 -$
$72\omega_{19}\omega_7^2c_s^2\omega_{11}v_3^2 + 8\omega_{19}\omega_7^2c_s^4\omega_{11}^2 + 20\omega_{19}\omega_7^2\omega_{11}v_3^2 + 4\omega_7c_s^2\omega_{11}^3 + 120\omega_{19}\omega_7^2c_s^2\omega_{11}^2v_3^2 - 4\omega_{19}\omega_7^2c_s^4\omega_{11}^3 - 24\omega_{19}^2\omega_7^2v_3^2 + 4\omega_7^2\omega_{11}^3v_3^4 + 16\omega_{19}\omega_7\omega_{11}^2v_3^4 +$
$4\omega_{19}^2\omega_7c_s^4\omega_{11} + 51\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2v_3^2 - 4\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2 + 32\omega_{19}\omega_7^2\omega_{11}^2v_3^4 - 4\omega_{19}c_s^4\omega_{11}^3 + 4\omega_7\omega_{11}^3v_3^2 - 8\omega_{19}^2\omega_{11}^2v_3^2 + 12\omega_{19}^2\omega_7^2c_s^2\omega_{11} - 51\omega_{19}\omega_7^2c_s^2\omega_{11}^3v_3^2 -$
$36\omega_{19}^2\omega_7^2\omega_{11}v_3^4 - 4\omega_7^2c_s^4\omega_{11}^2 - 8\omega_{19}\omega_7c_s^2\omega_{11}^3 + 72\omega_{19}^2\omega_7c_s^2\omega_{11}v_3^2 - 8\omega_{19}^2\omega_7c_s^4\omega_{11}^2 - 20\omega_{19}^2\omega_7\omega_{11}v_3^2 - 24\omega_7c_s^2\omega_{11}^3v_3^2 + 4\omega_7^2c_s^4\omega_{11}^3 - 13\omega_{19}\omega_7^2\omega_{11}^3v_3^4 -$
$8\omega_{19}^2\omega_7^2c_s^2 - 20\omega_{19}^2\omega_7\omega_{11}^2v_3^4 - 13\omega_{19}^2\omega_7^2\omega_{11}^2v_3^2 - 36\omega_{19}c_s^2\omega_{11}^3v_3^2 - 4\omega_7^2\omega_{11}^2v_3^4 - 8\omega_{19}\omega_{11}^3v_3^4 - 4\omega_{19}^2c_s^2\omega_{11}^2 - 20\omega_{19}\omega_7\omega_{11}^3v_3^2 - 4\omega_{19}\omega_7^2c_s^4\omega_{11})\frac{v_2}{4\omega_{19}^2\omega_7^2\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (8\omega_3^2\omega_1\omega_2^2 - 18\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 + \omega_3^2\omega_1^2v_2^2\omega_2^3 + 24\omega_3^2\omega_1v_2^2\omega_2^2v_3^2 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 24\omega_3^2\omega_1^2\omega_2^2v_3^2 - 72\omega_3^2\omega_1\omega_2^2v_3^4 - 84\omega_3^2c_s^4\omega_1^3\omega_2 -$
$48\omega_3^2\omega_1^3v_2^2\omega_2v_3^2 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 + 12c_s^2\omega_1^3\omega_2^2 - 2\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 + 8\omega_3^2v_2^2\omega_2^3 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 + 36c_s^4\omega_1^2\omega_2^3 - 4\omega_3c_s^2\omega_1^2v_2^2\omega_2^2 - 8\omega_3c_s^2\omega_1\omega_2^3 +$
$216\omega_3^2c_s^2\omega_1^3v_3^2 + 8\omega_3^2\omega_1\omega_2^3 + 4\omega_3^2\omega_1^2v_2^2\omega_2^2 + 16\omega_3^2c_s^2\omega_1^3v_2^2 - 2\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2c_s^4\omega_2^3 + 4\omega_3^2\omega_1^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 + 216\omega_3^2c_s^2\omega_1^2\omega_2^2v_3^2 -$
$36\omega_3^2c_s^4\omega_1^2\omega_2 - 36\omega_3^2\omega_1\omega_2^3v_3^4 + 12c_s^2\omega_1^2v_2^2\omega_2^2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_1^2\omega_2^3v_3^2 + 72\omega_3^2c_s^4\omega_1^3 + 56\omega_3^2c_s^2\omega_1^3\omega_2 - 8\omega_3^2\omega_2^3 - 36c_s^4\omega_1^3\omega_2^2 + 4\omega_3^2\omega_1^2v_2^2\omega_2 +$
$96\omega_3^2\omega_1v_2^2\omega_2^2v_3^2 + 84\omega_3^2\omega_1^3\omega_2v_3^2 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 + 24\omega_3^2\omega_1^3v_3^4 - 72\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 4\omega_3^2c_s^2\omega_1^2v_2^2\omega_2 - 324\omega_3^2c_s^2\omega_1^3\omega_2v_3^2 - 12c_s^2\omega_1^2\omega_2^3 +$
$24\omega_3^2\omega_2^3v_3^2 + 24\omega_3^2\omega_1^2v_2^2\omega_2v_3^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 - 72\omega_3^2v_2^2\omega_2^3v_3^2 + 72\omega_3^2c_s^2\omega_1^3\omega_2^2v_3^2 - 12\omega_3c_s^4\omega_1^3\omega_2 - 36\omega_3^2\omega_1^3\omega_2v_3^4 - 54\omega_3c_s^4\omega_1^2\omega_2^3 + 24\omega_3^2\omega_1^3v_2^2v_3^2 -$
$4\omega_3^2\omega_1^2\omega_2 + 20\omega_3^2c_s^2\omega_2^3 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 60\omega_3^2\omega_1\omega_2^3v_3^2 - \omega_3^2\omega_1^3v_2^2\omega_2^2 + 18\omega_3c_s^2\omega_1^3v_2^2\omega_2^2 - 48\omega_3^2\omega_1^2v_2^2\omega_2^2v_3^2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 + 48\omega_3^2\omega_2^3v_3^4 +$
$108\omega_3^2c_s^2\omega_1\omega_2^3v_3^2 + 2\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^2 - 4\omega_3^2\omega_1^3v_2^2 - 48\omega_3^2\omega_1^3v_3^2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 24\omega_3^2\omega_1^3\omega_2^2v_3^2 - 20\omega_3^2c_s^2v_2^2\omega_2^3 - 18\omega_3c_s^2\omega_1^3\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 +$

$48\omega_3^2\omega_1\omega_2^2v_3^2 - 24\omega_3^2\omega_1^2v_2^2\omega_2^3v_3^2 + 18\omega_3c_s^2\omega_1^2\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 + 8\omega_3c_s^2\omega_1v_2^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 + 4\omega_3c_s^2\omega_1^3\omega_2 - 8\omega_3^2\omega_1v_2^2\omega_2^3 - 12c_s^2\omega_1^3v_2^2\omega_2^2 + 8\omega_3^2c_s^2\omega_1v_2^2\omega_2^2 - 20\omega_3^2c_s^2\omega_1^3v_2^2\omega_2 + 72\omega_3^2\omega_1^2\omega_2^2v_3^4 - 8\omega_3^2\omega_1v_2^2\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 + 4\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_3c_s^2\omega_1^3v_2^2\omega_2 - 24\omega_3^2\omega_1^2\omega_2v_3^2 + 4\omega_3^2\omega_1^3v_2^2\omega_2 + 42\omega_3^2c_s^4\omega_1\omega_2^3 + 24\omega_3^2\omega_1^3v_2^2\omega_2^2v_3^2 - 216\omega_3^2c_s^2\omega_1\omega_2^2v_3^2 - 52\omega_3^2c_s^2\omega_1^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2 + 22\omega_3^2c_s^2\omega_1v_2^2\omega_2^3)\frac{v_2}{36\omega_3^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2\partial x_3^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-42c_s^2\omega^2v_3^2 + 36c_s^2\omega - 36v_3^4 + 4\omega^3v_3^4 + 12c_s^2\omega^3v_3^2 - 54\omega v_3^2 - 26\omega^2v_3^4 - 12c_s^2\omega^2 + 36c_s^4 + 54\omega v_3^4 - 36c_s^2v_3^2 + 26\omega^2v_3^2 - 54c_s^4\omega - 24c_s^2 + 20c_s^4\omega^2 - 4\omega^3v_3^2 - c_s^4\omega^3 + 54c_s^2\omega v_3^2 + 36v_3^2)\frac{\rho}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-\omega_{19}^2\omega_7^3c_s^2\omega_{11}^2 + 18\omega_{19}\omega_7^2c_s^2\omega_{11}^3 + 60\omega_{19}\omega_7^3\omega_{11}^2v_3^4 + 12\omega_7^3\omega_{11}^3v_3^4 + 6\omega_{19}^2\omega_7^2c_s^4\omega_{11}^2 - 36\omega_{19}\omega_7^3c_s^2\omega_{11}v_3^2 + 6\omega_{19}\omega_7^3c_s^4\omega_{11}^3 - 4\omega_{19}^2\omega_7^3\omega_{11}^3v_3^2 + 12\omega_{19}^2\omega_7^2\omega_{11}^2v_3^4 - 306\omega_{19}^2\omega_7^3c_s^2\omega_{11}v_3^2 + 12\omega_7^3c_s^2\omega_{11}^3v_3^2 + 72\omega_{19}^2\omega_7^3v_3^4 - 24\omega_{19}\omega_7\omega_{11}^3v_3^4 - 12\omega_{19}\omega_7^2c_s^2\omega_{11}^2 - 48\omega_{19}\omega_7^2\omega_{11}^3v_3^2 - 48\omega_{19}^2\omega_7c_s^2\omega_{11}^2v_3^2 + 36\omega_{19}\omega_7^3\omega_{11}v_3^2 + 13\omega_{19}^2\omega_7^2c_s^4\omega_{11}^3 - 6\omega_{19}\omega_7^3c_s^4\omega_{11}^2 - 12\omega_7^2c_s^2\omega_{11}^3v_3^2 - 19\omega_{19}^2\omega_7^3\omega_{11}^2v_3^2 - 108\omega_{19}^2\omega_7^2c_s^2\omega_{11}v_3^2 - 12\omega_7^3\omega_{11}^2v_3^4 - 27\omega_{19}\omega_7^3\omega_{11}^3v_3^4 + 6\omega_{19}^2\omega_7c_s^2\omega_{11}^3 - 12\omega_{19}\omega_7c_s^2\omega_{11}^3v_3^2 - 12\omega_{19}^2\omega_7\omega_{11}^3v_3^2 - 12\omega_{19}^2\omega_7^2c_s^4\omega_{11} + 24\omega_{19}\omega_7^2\omega_{11}^2v_3^2 - 48\omega_{19}^2c_s^2\omega_{11}^3v_3^2 + 12\omega_{19}^2\omega_7^2c_s^4 + 12\omega_{19}\omega_7c_s^4\omega_{11}^3 + 102\omega_{19}^2\omega_7c_s^2\omega_{11}^3v_3^2 - 90\omega_{19}^2\omega_7^3\omega_{11}v_3^4 + 12\omega_7^2\omega_{11}^3v_3^2 - 12\omega_7^3c_s^2\omega_{11}^2v_3^2 + 12\omega_{19}^2\omega_7^3c_s^2\omega_{11} + 12\omega_{19}^2c_s^4\omega_{11}^3 - 18\omega_{19}^2\omega_7^2\omega_{11}^3v_3^4 + 27\omega_{19}\omega_7^3\omega_{11}^3v_3^2 + 12\omega_{19}\omega_7^2c_s^4\omega_{11}^2 - \omega_{19}^2\omega_7^3c_s^4\omega_{11}^3 + 19\omega_{19}^2\omega_7^3\omega_{11}^2v_3^4 + 6\omega_{19}\omega_7^3c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_7^3c_s^2\omega_{11}^3v_3^2 - 5\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3 - 12\omega_{19}\omega_7^2c_s^2\omega_{11}^2v_3^2 + 12\omega_7^3\omega_{11}^2v_3^2 - 18\omega_{19}\omega_7^2c_s^4\omega_{11}^3 + 90\omega_{19}^2\omega_7^3\omega_{11}v_3^2 + \omega_{19}^2\omega_7^3c_s^4\omega_{11}^2 - 12\omega_7^2\omega_{11}^3v_3^4 - 21\omega_{19}\omega_7^3c_s^2\omega_{11}^3v_3^2 + 18\omega_{19}^2\omega_7^2\omega_{11}^3v_3^2 + 162\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2v_3^2 - 6\omega_{19}\omega_7^3c_s^2\omega_{11}^3 - 6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_7\omega_{11}^3v_3^4 - 24\omega_{19}\omega_7^2\omega_{11}^2v_3^4 + 252\omega_{19}^2\omega_7^3c_s^2v_3^2 - 12\omega_{19}^2\omega_7^3c_s^2 + 60\omega_{19}^2\omega_7^3c_s^2\omega_{11}^2v_3^2 + 12\omega_{19}^2\omega_7^2c_s^2\omega_{11} - 12\omega_7^3\omega_{11}^3v_3^2 + 30\omega_{19}\omega_7^2c_s^2\omega_{11}^3v_3^2 + 4\omega_{19}^2\omega_7^3\omega_{11}^3v_3^4 - 12\omega_{19}\omega_7c_s^2\omega_{11}^3 - 12\omega_{19}^2\omega_7^3c_s^4\omega_{11} - 60\omega_{19}\omega_7^3\omega_{11}^2v_3^2 + 48\omega_{19}\omega_7^2\omega_{11}^3v_3^4 - 36\omega_{19}\omega_7^3\omega_{11}v_3^4 + 54\omega_{19}\omega_7^3c_s^2\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_7^2\omega_{11}^2v_3^2 - 81\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3v_3^2 - 24\omega_{19}^2\omega_7c_s^4\omega_{11}^3 - 72\omega_{19}^2\omega_7^3v_3^2 + 24\omega_{19}\omega_7\omega_{11}^3v_3^2)\frac{\rho}{12\omega_{19}^2\omega_7^3\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-\omega_{19}^2\omega_7^3c_s^2\omega_{11}^2 + 18\omega_{19}\omega_7^2c_s^2\omega_{11}^3 + 72\omega_{19}\omega_7^3\omega_{11}^2v_3^4 + 36\omega_7^3\omega_{11}^3v_3^4 + 6\omega_{19}^2\omega_7^2c_s^4\omega_{11}^2 - 108\omega_{19}\omega_7^3c_s^2\omega_{11}v_3^2 + 6\omega_{19}\omega_7^3c_s^4\omega_{11}^3 - 4\omega_{19}^2\omega_7^3\omega_{11}^3v_3^2 - 306\omega_{19}^2\omega_7^3c_s^2\omega_{11}v_3^2 + 108\omega_7^3c_s^2\omega_{11}^3v_3^2 + 72\omega_{19}^2\omega_7^3v_3^4 - 12\omega_{19}\omega_7^2c_s^2\omega_{11}^2 - 36\omega_{19}\omega_7^2\omega_{11}^3v_3^2 + 36\omega_{19}\omega_7^3\omega_{11}v_3^2 + 13\omega_{19}^2\omega_7^2c_s^4\omega_{11}^3 - 6\omega_{19}\omega_7^3c_s^4\omega_{11}^2 - 108\omega_7^2c_s^2\omega_{11}^3v_3^2 - 19\omega_{19}^2\omega_7^3\omega_{11}^2v_3^2 - 36\omega_{19}^2\omega_7^2c_s^2\omega_{11}v_3^2 - 36\omega_7^3\omega_{11}^2v_3^4 - 39\omega_{19}\omega_7^3\omega_{11}^3v_3^4 + 6\omega_{19}^2\omega_7c_s^2\omega_{11}^3 + 36\omega_{19}\omega_7c_s^2\omega_{11}^3v_3^2 - 12\omega_{19}^2\omega_7^2c_s^4\omega_{11} + 12\omega_{19}^2\omega_7^3c_s^4 + 12\omega_{19}\omega_7c_s^4\omega_{11}^3 - 18\omega_{19}^2\omega_7c_s^2\omega_{11}^3v_3^2 - 90\omega_{19}^2\omega_7^3\omega_{11}v_3^4 + 36\omega_7^2\omega_{11}^3v_3^2 - 108\omega_7^3c_s^2\omega_{11}^2v_3^2 + 12\omega_{19}^2\omega_7^3c_s^2\omega_{11} + 12\omega_{19}^2c_s^4\omega_{11}^3 - 6\omega_{19}^2\omega_7^2\omega_{11}^3v_3^4 + 39\omega_{19}\omega_7^3\omega_{11}^3v_3^2 + 12\omega_{19}\omega_7^2c_s^4\omega_{11}^2 - \omega_{19}^2\omega_7^3c_s^4\omega_{11}^3 + 19\omega_{19}^2\omega_7^3\omega_{11}^2v_3^4 + 6\omega_{19}\omega_7^3c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_7^3c_s^2\omega_{11}^3v_3^2 - 5\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3 + 36\omega_{19}\omega_7^2c_s^2\omega_{11}^2v_3^2 + 36\omega_7^3\omega_{11}^2v_3^2 - 18\omega_{19}\omega_7^2c_s^4\omega_{11}^3 + 90\omega_{19}^2\omega_7^3\omega_{11}v_3^2 + \omega_{19}^2\omega_7^3c_s^4\omega_{11}^2 - 12\omega_7^2\omega_{11}^3v_3^4 - 21\omega_{19}\omega_7^3c_s^2\omega_{11}^3v_3^2 + 18\omega_{19}^2\omega_7^2\omega_{11}^3v_3^2 + 162\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2v_3^2 - 6\omega_{19}\omega_7^3c_s^2\omega_{11}^3 - 6\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2 + 12\omega_{19}^2\omega_7\omega_{11}^3v_3^4 - 24\omega_{19}\omega_7^2\omega_{11}^2v_3^4 + 252\omega_{19}^2\omega_7^3c_s^2v_3^2 - 12\omega_{19}^2\omega_7^3c_s^2 + 60\omega_{19}^2\omega_7^3c_s^2\omega_{11}^2v_3^2 + 12\omega_{19}^2\omega_7^2c_s^2\omega_{11} - 12\omega_7^3\omega_{11}^3v_3^2 + 30\omega_{19}\omega_7^2c_s^2\omega_{11}^3v_3^2 + 4\omega_{19}^2\omega_7^3\omega_{11}^3v_3^4 - 12\omega_{19}\omega_7c_s^2\omega_{11}^3 - 12\omega_{19}^2\omega_7^3c_s^4\omega_{11} - 60\omega_{19}\omega_7^3\omega_{11}^2v_3^2 + 48\omega_{19}\omega_7^2\omega_{11}^3v_3^4 - 36\omega_{19}\omega_7^3\omega_{11}v_3^4 + 54\omega_{19}\omega_7^3c_s^2\omega_{11}^2v_3^2 - 12\omega_{19}^2\omega_7^2\omega_{11}^2v_3^2 - 81\omega_{19}^2\omega_7^2c_s^2\omega_{11}^3v_3^2 - 24\omega_{19}^2\omega_7c_s^4\omega_{11}^3 - 72\omega_{19}^2\omega_7^3v_3^2 + 24\omega_{19}\omega_7\omega_{11}^3v_3^2)\frac{\rho}{12\omega_{19}^2\omega_7^3\omega_{11}^3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-6\omega_6^2\omega_3^3\omega_{10}c_s^4 + 18\omega_6^3\omega_3^2\omega_{10}c_s^2 + 36\omega_6\omega_3^3\omega_{10}v_3^2 + 36\omega_6^2\omega_3^2\omega_{10}c_s^2v_3^2 - 36\omega_6^2\omega_3^3v_3^4 + 12\omega_6^3\omega_3\omega_{10}c_s^4 - 108\omega_6^3\omega_3^2c_s^2v_3^2 - 3\omega_6^3\omega_3^2\omega_{10}^2c_s^2v_3^2 + 12\omega_6\omega_3^2\omega_{10}^2c_s^2 - 4\omega_6^3\omega_3^3\omega_{10}^2v_3^2 + 6\omega_6^3\omega_3\omega_{10}^2c_s^2 - 39\omega_6^3\omega_3^3\omega_{10}v_3^4 + 36\omega_6^3\omega_3^2v_3^2 + 12\omega_3^3\omega_{10}^2c_s^4 - \omega_6^2\omega_3^3\omega_{10}^2c_s^2 - 90\omega_6\omega_3^3\omega_{10}^2v_3^4 + 13\omega_6^3\omega_3^2\omega_{10}^2c_s^4 + 252\omega_3^3\omega_{10}^2c_s^2v_3^2 + 72\omega_6^2\omega_3^3\omega_{10}v_3^4 - 36\omega_6^3\omega_3^2\omega_{10}v_3^2 + 36\omega_6^3\omega_3\omega_{10}c_s^2v_3^2 - 108\omega_6\omega_3^3\omega_{10}c_s^2v_3^2 + 6\omega_6^2\omega_3^2\omega_{10}^2c_s^4 + 198\omega_6^2\omega_3^3\omega_{10}c_s^2v_3^2 - 12\omega_6^2\omega_3^2\omega_{10}c_s^2 + 72\omega_3^3\omega_{10}^2v_3^4 + 6\omega_6^3\omega_3^3\omega_{10}c_s^4 - 19\omega_6^2\omega_3^3\omega_{10}^2v_3^2 + 12\omega_6^3\omega_3^3\omega_{10}^2c_s^2v_3^2 - 36\omega_6^3\omega_3^3v_3^2 - 6\omega_6^3\omega_3^2\omega_{10}v_3^4 - 12\omega_6\omega_3^3\omega_{10}^2c_s^4 - 6\omega_6^2\omega_3^2\omega_{10}^2c_s^2 - 18\omega_6^3\omega_3\omega_{10}^2c_s^2v_3^2 - \omega_6^3\omega_3^3\omega_{10}^2c_s^4 - 72\omega_6^2\omega_3^3\omega_{10}v_3^2 - 306\omega_6\omega_3^3\omega_{10}^2c_s^2v_3^2 + 36\omega_6^3\omega_3^2\omega_{10}v_3^4 + 19\omega_6^2\omega_3^3\omega_{10}^2v_3^4 + 108\omega_6^3\omega_3^2c_s^2v_3^2 + 36\omega_6^3\omega_3^3v_3^4 + 6\omega_6^3\omega_3^2\omega_{10}^2v_3^2 + 12\omega_6\omega_3^3\omega_{10}^2c_s^2 + 60\omega_6^2\omega_3^3\omega_{10}^2c_s^2v_3^2 + 12\omega_6^2\omega_3^2\omega_{10}c_s^4 - 72\omega_3^3\omega_{10}^2v_3^2 - 99\omega_6^3\omega_3^3\omega_{10}c_s^2v_3^2 - 6\omega_6^3\omega_3^3\omega_{10}c_s^2 + 36\omega_6^2\omega_3^3v_3^2 + 18\omega_6^2\omega_3^2\omega_{10}^2c_s^2v_3^2 - 12\omega_6^3\omega_3\omega_{10}c_s^2 - 12\omega_6\omega_3^3\omega_{10}^2c_s^4 - 108\omega_6^3\omega_3^2c_s^2v_3^2 + 4\omega_6^3\omega_3^3\omega_{10}^2v_3^4 + 6\omega_6^2\omega_3^3\omega_{10}c_s^2 + 12\omega_6^3\omega_{10}^2c_s^4 + 54\omega_6^3\omega_3^2\omega_{10}c_s^2v_3^2 - 18\omega_6^3\omega_3^2\omega_{10}c_s^4 - 36\omega_6\omega_3^3\omega_{10}v_3^4 + \omega_6^2\omega_3^3\omega_{10}^2c_s^4 + 90\omega_6\omega_3^3\omega_{10}^2v_3^2 - 5\omega_6^3\omega_3^2\omega_{10}^2c_s^2 - 24\omega_6^3\omega_3\omega_{10}^2c_s^4 - 36\omega_6\omega_3^2\omega_{10}^2c_s^2v_3^2 + 39\omega_6^3\omega_3^3\omega_{10}v_3^2 - 36\omega_6^3\omega_3^2v_3^4 - 12\omega_3^3\omega_{10}^2c_s^2)\frac{\rho}{12\omega_6^3\omega_3^3\omega_{10}^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-108\omega_3\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 + 24\omega_3\omega_4^2\omega_1^3\omega_2v_3^2 - 96\omega_3^2\omega_4^2\omega_1^3v_3^2 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 264\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2v_3^2 + 72\omega_3^2\omega_4c_s^4\omega_1\omega_2^3 + 38\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^4 - 216\omega_3\omega_4^2\omega_1^2\omega_2^3v_3^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3\omega_4^2c_s^2\omega_1^3\omega_2 + 48\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^2 + 72\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 + 36\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3 - 2\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 + 18\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 + 192\omega_3^2\omega_4^2\omega_2^3v_3^4 - 12\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2 + 72\omega_3\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 - 72\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 24\omega_3\omega_4^2\omega_1\omega_2^3v_3^4 + 117\omega_3^2\omega_4\omega_1^3\omega_2^2v_3^2 - 144\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3v_3^2 - 24\omega_3^2\omega_4^2\omega_1^3v_2^2 - 12\omega_3^2\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 + 8\omega_3^2\omega_4^2c_s^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^3 - 40\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2 + 54\omega_4^2\omega_1^3\omega_2^3v_3^4 - 108\omega_3\omega_4\omega_1^3\omega_2^3v_3^2 - 288\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^4 - 56\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2 - 36\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^4 + 336\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2v_3^2 + 144\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2v_3^2 + 204\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^2 + 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 288\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 54\omega_3^2\omega_1^3\omega_2^3v_3^4 + 108\omega_3\omega_4^2\omega_1^3\omega_2^2v_3^4 + 36\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^2 - 36\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3 - 36\omega_3\omega_4^2c_s^4\omega_1^3\omega_2^2 - 297\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3v_3^2 - 288\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3v_3^2 - 40\omega_3^2\omega_4^2c_s^2\omega_1^3 + 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 180\omega_3\omega_4\omega_1^2\omega_2^3v_3^4 + 72\omega_4^2\omega_1^2\omega_2^3v_3^2 + 264\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 - 72\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3 - 96\omega_3\omega_4^2c_s^2\omega_1v_2^2\omega_2^3 - 216\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2 - 36\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^3 + 16\omega_3\omega_4^2c_s^4\omega_1^3\omega_2 - 36\omega_3^2\omega_4\omega_1^3\omega_2^2v_3^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 60\omega_3\omega_4^2\omega_1^2\omega_2^2v_3^2 + 20\omega_3^2\omega_4^2c_s^4\omega_1^2\omega_2^2 + 108\omega_3^2\omega_1^2\omega_2^3v_3^2 - 18\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 + 168\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^4 + 324\omega_3\omega_4c_s^2\omega_1^3\omega_2^3v_3^2 + 24\omega_3^2\omega_4^2\omega_1^3\omega_2^3v_3^4 + 24\omega_3^2\omega_4^2c_s^2\omega_1^3v_3^2 + 240\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^2 + 48\omega_3\omega_4^2c_s^2\omega_1^3v_2^2\omega_2 + 64\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2 + 108\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^2v_3^2 - 324\omega_3^2c_s^2\omega_1^2\omega_2^3v_3^2 + 40\omega_3\omega_4^2c_s^4\omega_1^2\omega_2^2 - 297\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2 + 6\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 117\omega_3\omega_4^2\omega_1^3\omega_2^3v_3^4 + 72\omega_3^2\omega_4\omega_1\omega_2^3v_3^2 + 288\omega_3^2\omega_4\omega_1^2\omega_2^3v_3^4 - 12\omega_3^2\omega_4^2c_s^2\omega_1^3v_2^2\omega_2^2 - 852\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3v_3^2 + 36\omega_3\omega_4^2c_s^2\omega_1^3\omega_2^2 + 86\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2\omega_4^2c_s^4\omega_1^3\omega_2 + 36\omega_3\omega_4\omega_1^3\omega_2^2v_3^2 + 96\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^4 - 36\omega_4^2\omega_1^3\omega_2^2v_3^4 - 16\omega_3^2\omega_4^2\omega_2^3 + 432\omega_3^2\omega_4^2c_s^2\omega_2^3v_3^2 + 576\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3v_3^2 - 60\omega_3\omega_4^2\omega_1^2\omega_2^2v_3^4 + 80\omega_3^2\omega_4^2c_s^4\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 108\omega_3^2\omega_1^2\omega_2^3v_3^4 - 108\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2 - 144\omega_3^2\omega_4^2\omega_1^2\omega_2v_3^2 + 72\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3 + 648\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3v_3^2 - 48\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 24\omega_3^2\omega_4^2\omega_1^3\omega_2^3v_3^2 + 180\omega_3\omega_4\omega_1^2\omega_2^3v_3^2 - 72\omega_4^2\omega_1^2\omega_2^3v_3^4 + 48\omega_3^2\omega_4^2\omega_2^3\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 36\omega_3^2\omega_4\omega_1^3\omega_2^2v_3^4 - 172\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 288\omega_3^2\omega_4\omega_1^2\omega_2^3v_3^2 + 48\omega_3\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2 - 108\omega_4^2c_s^2\omega_1^3\omega_2^2v_3^2 + 72\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2v_3^2 - 36\omega_3\omega_4\omega_1^3\omega_2^2v_3^4 - 144\omega_3^2\omega_4^2\omega_1\omega_2^2v_3^2 + 16\omega_3\omega_4^2c_s^4\omega_1\omega_2^3 + 36\omega_4^2\omega_1^3\omega_2^2v_3^2 - 492\omega_3^2\omega_4^2c_s^2\omega_1^3\omega_2v_3^2 - 144\omega_3^2\omega_4^2\omega_1^2\omega_2^2v_3^4 +$

$16\omega_3^2\omega_4^2c_s^4\omega_1\omega_2^2-96\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2+16\omega_3^2\omega_4^2\omega_1\omega_2^2+174\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2+18\omega_3^2\omega_4c_s^4\omega_1^3\omega_2^3+117\omega_3\omega_4^2\omega_1^3\omega_2^3v_3^2-72\omega_3^2\omega_4\omega_1\omega_2^3v_3^4-48\omega_3^2\omega_4^2\omega_2^3v_3^2+24\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^2+24\omega_3\omega_4^2\omega_1\omega_2^3v_3^2-117\omega_3^2\omega_4\omega_1^3\omega_2^3v_3^4-288\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2v_3^2+162\omega_3^2c_s^2\omega_1^3\omega_2^3v_3^2-108\omega_3^2\omega_4c_s^2\omega_1^2\omega_2^2v_3^2-24\omega_3\omega_4^2\omega_1^3\omega_2v_3^4+48\omega_3^2\omega_4^2\omega_1^3v_3^4-72\omega_3\omega_4^2c_s^2\omega_1^3\omega_2v_3^2+24\omega_3^2\omega_4^2c_s^2v_2^2\omega_2^3-86\omega_3^2\omega_4^2\omega_1^3\omega_2^2v_3^2+216\omega_3\omega_4^2\omega_1^2\omega_2^3v_3^4+144\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2v_3^2+48\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^3+468\omega_3\omega_4^2c_s^2\omega_1^2\omega_2^3v_3^2-492\omega_3^2\omega_4^2c_s^2\omega_1^2\omega_2^2v_3^2-72\omega_3^2\omega_4c_s^4\omega_1^2\omega_2^3+8\omega_3^2\omega_4^2\omega_1^3-108\omega_3^2\omega_4^2\omega_1^3\omega_2v_3^4-54\omega_3^2\omega_1^3\omega_2^3v_3^2+32\omega_3^2\omega_4^2c_s^4\omega_1^3-108\omega_3\omega_4^2\omega_1^3\omega_2^2v_3^2-16\omega_3\omega_4^2c_s^2\omega_1\omega_2^3+40\omega_3^2\omega_4^2\omega_1^2\omega_2^3v_3^4+12\omega_3^2\omega_4^2c_s^2\omega_1^2v_2^2\omega_2^3-540\omega_3\omega_4c_s^2\omega_1^2\omega_2^3v_3^2-432\omega_3^2\omega_4^2v_2^2\omega_2^3v_3^2-54\omega_4^2\omega_1^3\omega_2^3v_3^2+108\omega_3\omega_4\omega_1^3\omega_2^3v_3^4-6\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2+96\omega_3^2\omega_4^2\omega_1\omega_2^3v_3^2-32\omega_3^2\omega_4^2c_s^2\omega_1\omega_2^2+36\omega_3^2\omega_4\omega_1^2\omega_2^2v_3^2-18\omega_3^2\omega_4c_s^2\omega_1^3\omega_2^3+144\omega_3^2\omega_4^2\omega_1^3v_2^2v_3^2+162\omega_4^2c_s^2\omega_1^3\omega_2^3v_3^2)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2\partial x_3^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=(-25\omega_{19}\omega_7^2c_s^2\omega_{11}^3+32\omega_{19}^2\omega_7c_s^2\omega_{11}-120\omega_{19}^2\omega_7^2\omega_{11}v_3^2-20\omega_{19}c_s^2\omega_{11}^3-17\omega_{19}^2\omega_7^2\omega_{11}^2-28\omega_{19}\omega_7\omega_{11}^3-28\omega_{19}\omega_{11}^3v_3^2-16\omega_7^2\omega_{11}^2v_3^2+56\omega_{19}\omega_7^2c_s^2\omega_{11}^2-43\omega_{19}\omega_7^2\omega_{11}^3v_3^2+16\omega_{19}\omega_7\omega_{11}^2-68\omega_{19}^2\omega_7\omega_{11}^2v_3^2-12\omega_{19}^2\omega_{11}^2+8\omega_7\omega_{11}^3+16\omega_7^2c_s^2\omega_{11}^3-32\omega_{19}\omega_7^2c_s^2\omega_{11}+104\omega_{19}\omega_7^2\omega_{11}^2v_3^2+48\omega_{19}^2\omega_7^2\omega_{11}-16\omega_7^2c_s^2\omega_{11}^2+16\omega_7^2\omega_{11}^3v_3^2-44\omega_{19}^2\omega_7c_s^2\omega_{11}^2-24\omega_{19}^2\omega_7\omega_{11}-64\omega_{19}\omega_7^2\omega_{11}v_3^2-16\omega_7c_s^2\omega_{11}^3+80\omega_{19}^2\omega_7^2v_3^2-48\omega_{19}\omega_7\omega_{11}^2v_3^2+24\omega_{19}\omega_7^2\omega_{11}-32\omega_{19}^2\omega_7^2+25\omega_{19}^2\omega_7^2c_s^2\omega_{11}^2-16\omega_7\omega_{11}^3v_3^2+28\omega_{19}^2\omega_{11}^2v_3^2-72\omega_{19}^2\omega_7^2c_s^2\omega_{11}+44\omega_{19}\omega_7c_s^2\omega_{11}^3-40\omega_{19}\omega_7^2\omega_{11}^2-8\omega_7^2\omega_{11}^3+64\omega_{19}^2\omega_7\omega_{11}v_3^2-16\omega_{19}\omega_7c_s^2\omega_{11}^2+48\omega_{19}^2\omega_7^2c_s^2+43\omega_{19}^2\omega_7^2\omega_{11}^2v_3^2+8\omega_7^2\omega_{11}^2+12\omega_{19}\omega_{11}^3+17\omega_{19}\omega_7^2\omega_{11}^3+20\omega_{19}^2c_s^2\omega_{11}^2+68\omega_{19}\omega_7\omega_{11}^3v_3^2+28\omega_{19}^2\omega_7\omega_{11}^2)\frac{\rho v_2v_3}{4\omega_{19}^2\omega_7^2\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}=(-66\omega_3\omega_1\omega_2^3v_3^2-54\omega_3c_s^2\omega_1\omega_2^2+5\omega_3\omega_1^3v_2^2\omega_2^2+48\omega_3\omega_1^3\omega_2+5\omega_3\omega_1^2\omega_2^3-6\omega_1^2v_2^2\omega_2^2+27c_s^2\omega_1^3\omega_2^2-51\omega_3\omega_1^2\omega_2^2+27\omega_3c_s^2\omega_1\omega_2^3-12\omega_1\omega_2^3+84\omega_3c_s^2\omega_1^3-9\omega_1^2v_2^2\omega_2^3-18c_s^2\omega_1^2\omega_2^2+27\omega_3\omega_1v_2^2\omega_2^3+6\omega_3\omega_1^2\omega_2-12\omega_3c_s^2\omega_2^3-120\omega_3\omega_1\omega_2^2v_3^2+12\omega_3\omega_1^3v_2^2-18c_s^2\omega_1^3\omega_2-27c_s^2\omega_1^2\omega_2^3-12\omega_3\omega_1^2\omega_2v_3^2-5\omega_3\omega_1^3\omega_2^2-18\omega_3\omega_1^3v_2^2\omega_2+48\omega_3\omega_1^3v_3^2+6\omega_3\omega_1v_2^2\omega_2^2+36c_s^2\omega_1\omega_2^3-18\omega_3c_s^2\omega_1^2\omega_2+132\omega_3\omega_1^2\omega_2^2v_3^2-5\omega_3\omega_1^2v_2^2\omega_2^3-9\omega_1^3\omega_2^2+9\omega_1^3v_2^2\omega_2^2-9\omega_3\omega_1^2v_2^2\omega_2^2+84\omega_3\omega_2^3v_3^2+15\omega_3c_s^2\omega_1^3\omega_2^2-12\omega_3\omega_2^3+6\omega_3\omega_1^2v_2^2\omega_2-66\omega_3\omega_1^3\omega_2v_3^2-15\omega_3c_s^2\omega_1^2\omega_2^3+42\omega_3\omega_1\omega_2^2-108\omega_3c_s^2\omega_1^3\omega_2+6\omega_1^3\omega_2+9\omega_1^2\omega_2^3-6\omega_1^3v_2^2\omega_2-36\omega_3\omega_1^3+3\omega_3\omega_1\omega_2^3+81\omega_3c_s^2\omega_1^2\omega_2^2-24\omega_3v_2^2\omega_2^3+12\omega_1v_2^2\omega_2^3+6\omega_1^2\omega_2^2)\frac{\rho v_2v_3}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_z^4\rho}$ **at** $\frac{\partial^4\rho}{\partial x_3^4}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z^4\rho}=(12+404c_s^2\omega^2v_3^2+198c_s^2\omega-\omega^3+144v_3^4+8\omega^2-9\omega^3v_3^4+6c_s^2\omega^3-34c_s^2\omega^3v_3^2+234\omega v_3^2+90\omega^2v_3^4-78c_s^2\omega^2+144c_s^4-216\omega v_3^4-18\omega+672c_s^2v_3^2-98\omega^2v_3^2-216c_s^4\omega-132c_s^2+82c_s^4\omega^2+10\omega^3v_3^2-5c_s^4\omega^3-1008c_s^2\omega v_3^2-156v_3^2)\frac{v_3}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}=(12+10\omega_{11}^3v_3^2-1008c_s^2\omega_{11}v_3^2-78c_s^2\omega_{11}^2+144v_3^4+6c_s^2\omega_{11}^3+8\omega_{11}^2-98\omega_{11}^2v_3^2-216\omega_{11}v_3^4+198c_s^2\omega_{11}-\omega_{11}^3+144c_s^4+90\omega_{11}^2v_3^4-18\omega_{11}-5c_s^4\omega_{11}^3+672c_s^2v_3^2-34c_s^2\omega_{11}^3v_3^2+234\omega_{11}v_3^2+82c_s^4\omega_{11}^2-132c_s^2-216c_s^4\omega_{11}-9\omega_{11}^3v_3^4+404c_s^2\omega_{11}^2v_3^2-156v_3^2)\frac{v_3}{12\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z^4\rho}=C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z^4\rho}=C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z^4\rho}=C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z^4\rho}=(12-98\omega_6^2v_3^2-18\omega_6+6\omega_6^3c_s^2+144v_3^4-216\omega_6v_3^4-\omega_6^3-78\omega_6^2c_s^2+404\omega_6^2c_s^2v_3^2+10\omega_6^3v_3^2+8\omega_6^2+144c_s^4-216\omega_6c_s^4-1008\omega_6c_s^2v_3^2-9\omega_6^3v_3^4+82\omega_6^2c_s^4+198\omega_6c_s^2+672c_s^2v_3^2-132c_s^2-5\omega_6^3c_s^4+90\omega_6^2v_3^4+234\omega_6v_3^2-156v_3^2-34\omega_6^3c_s^2v_3^2)\frac{v_3}{12\omega_6^3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z^4\rho}=(328\omega_3\omega_1\omega_2^3v_3^2-80\omega_3c_s^2\omega_1\omega_2^2-10\omega_3\omega_1^3\omega_2+16\omega_3\omega_1^2\omega_2^3-48c_s^4\omega_1^2\omega_2^2-1088\omega_3c_s^2\omega_1^2\omega_2^2v_3^2+8c_s^2\omega_1^3\omega_2v_3^2-84\omega_3\omega_1^3\omega_2v_3^4+180\omega_3\omega_1^2\omega_2^3v_3^4-98\omega_3\omega_1^3\omega_2^2v_3^2-16\omega_3\omega_1^2\omega_2^2+320\omega_3c_s^2\omega_1\omega_2^3+24c_s^4\omega_1^3\omega_2-52\omega_3c_s^2\omega_1^3+16c_s^2\omega_1^2\omega_2^2+72\omega_3c_s^4\omega_1\omega_2^2-16c_s^2\omega_1^2\omega_2^2v_3^2-264\omega_3\omega_1^2\omega_2^2v_3^4+808\omega_3c_s^2\omega_1^2\omega_2^3v_3^2+8\omega_3\omega_1^2\omega_2-184\omega_3c_s^2\omega_2^3-176\omega_3\omega_1\omega_2^2v_3^2-3\omega_3\omega_1^3\omega_2^3-464\omega_3c_s^2\omega_1^3\omega_2v_3^2-372\omega_3c_s^4\omega_1\omega_2^3-8c_s^2\omega_1^3\omega_2+144\omega_3\omega_2^3v_3^4-104\omega_3\omega_1^2\omega_2v_3^2+8\omega_3\omega_1^3\omega_2^2+760\omega_3c_s^2\omega_2^3v_3^2-28\omega_3\omega_1^3v_3^2+30\omega_3\omega_1^3\omega_2^3v_3^2-8c_s^2\omega_1\omega_2^3-156\omega_3c_s^4\omega_1^3\omega_2+168\omega_3\omega_1\omega_2^2v_3^4+164\omega_3c_s^4\omega_1^2\omega_2^3+18\omega_3c_s^2\omega_1^3\omega_2^3-80\omega_3c_s^2\omega_1^2\omega_2+280\omega_3\omega_1^2\omega_2^2v_3^2+72\omega_3c_s^4\omega_1^3-1472\omega_3c_s^2\omega_1\omega_2^3v_3^2+96\omega_3\omega_1^2\omega_2v_3^4-120\omega_3c_s^4\omega_1^2\omega_2^2+24\omega_3\omega_1^3v_3^4-27\omega_3\omega_1^3\omega_2^2v_3^4+160\omega_3c_s^2\omega_1^3v_3^2-160\omega_3\omega_2^3v_3^2+404\omega_3c_s^2\omega_1^3\omega_2^2v_3^2-78\omega_3c_s^2\omega_1^3\omega_2^2+16\omega_3\omega_2^3+656\omega_3c_s^2\omega_1\omega_2^2v_3^2+94\omega_3\omega_1^3\omega_2v_3^2-156\omega_3c_s^2\omega_1^2\omega_2^3+8\omega_3\omega_1\omega_2^2+24c_s^4\omega_1\omega_2^3-196\omega_3\omega_1^2\omega_2^3v_3^2+122\omega_3c_s^2\omega_1^3\omega_2-300\omega_3\omega_1\omega_2^3v_3^4+8c_s^2\omega_1\omega_2^3v_3^2+72\omega_3c_s^4\omega_1^2\omega_2-15\omega_3c_s^4\omega_1^3\omega_2^3+4\omega_3\omega_1^3-102\omega_3c_s^2\omega_1^3\omega_2^3v_3^2-28\omega_3\omega_1\omega_2^3+152\omega_3c_s^2\omega_1^2\omega_2^2+440\omega_3c_s^2\omega_1^2\omega_2v_3^2+90\omega_3\omega_1^3\omega_2^2v_3^4+216\omega_3c_s^4\omega_2^3+82\omega_3c_s^4\omega_1^3\omega_2^2)\frac{v_3}{36\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}^4_z v_3}$ at $\frac{\partial^4 v_3}{\partial x_3^4}$:

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}^4_z v_3} = (12 + 252c_s^2\omega^2 v_3^2 + 54c_s^2\omega - \omega^3 + 504v_3^4 + 8\omega^2 - 29\omega^3 v_3^4 + 2c_s^2\omega^3 - 18c_s^2\omega^3 v_3^2 + 378\omega v_3^2 + 310\omega^2 v_3^4 - 22c_s^2\omega^2 + 24c_s^4 - 756\omega v_3^4 - 18\omega + 432c_s^2 v_3^2 - 154\omega^2 v_3^2 - 36c_s^4\omega - 36c_s^2 + 14c_s^4\omega^2 + 14\omega^3 v_3^2 - c_s^4\omega^3 - 648c_s^2\omega v_3^2 - 252v_3^2)\frac{\rho}{12\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3} = (12 + 14\omega_{11}^3 v_3^2 - 648c_s^2\omega_{11} v_3^2 - 22c_s^2\omega_{11}^2 + 504v_3^4 + 2c_s^2\omega_{11}^3 + 8\omega_{11}^2 - 154\omega_{11}^2 v_3^2 - 756\omega_{11} v_3^4 + 54c_s^2\omega_{11} - \omega_{11}^3 + 24c_s^4 + 310\omega_{11}^2 v_3^4 - 18\omega_{11} - c_s^4\omega_{11}^3 + 432c_s^2 v_3^2 - 18c_s^2\omega_{11}^3 v_3^2 + 378\omega_{11} v_3^2 + 14c_s^4\omega_{11}^2 - 36c_s^2 - 36c_s^4\omega_{11} - 29\omega_{11}^3 v_3^4 + 252c_s^2\omega_{11}^2 v_3^2 - 252v_3^2)\frac{\rho}{12\omega_{11}^3}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^4_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^4_z v_3} = (12 - 154\omega_6^2 v_3^2 - 18\omega_6 + 2\omega_6^3 c_s^2 + 504v_3^4 - 756\omega_6 v_3^4 - \omega_6^3 - 22\omega_6^2 c_s^2 + 252\omega_6^2 c_s^2 v_3^2 + 14\omega_6^3 v_3^2 + 8\omega_6^2 + 24c_s^4 - 36\omega_6 c_s^4 - 648\omega_6 c_s^2 v_3^2 - 29\omega_6^3 v_3^4 + 14\omega_6^2 c_s^4 + 54\omega_6 c_s^2 + 432c_s^2 v_3^2 - 36c_s^2 - \omega_6^3 c_s^4 + 310\omega_6^2 v_3^4 + 378\omega_6 v_3^2 - 252v_3^2 - 18\omega_6^3 c_s^2 v_3^2)\frac{\rho}{12\omega_6^3}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^4_z v_3} = (552\omega_3\omega_1\omega_2^3 v_3^2 - 16\omega_3 c_s^2\omega_1\omega_2^2 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 - 16c_s^4\omega_1^2\omega_2^2 - 576\omega_3 c_s^2\omega_1^2\omega_2^2 v_3^2 + 24c_s^2\omega_1^3\omega_2 v_3^2 - 312\omega_3\omega_1^3\omega_2 v_3^4 + 620\omega_3\omega_1^2\omega_2^3 v_3^4 - 154\omega_3\omega_1^3\omega_2^2 v_3^2 - 16\omega_3\omega_1^2\omega_2^2 + 96\omega_3 c_s^2\omega_1\omega_2^3 + 8c_s^4\omega_1^3\omega_2 - 20\omega_3 c_s^2\omega_1^3 + 16c_s^2\omega_1^2\omega_2^2 + 8\omega_3 c_s^4\omega_1\omega_2^2 - 48c_s^2\omega_1^2\omega_2^2 v_3^2 - 888\omega_3\omega_1^2\omega_2^2 v_3^4 + 504\omega_3 c_s^2\omega_1^2\omega_2^3 v_3^2 + 8\omega_3\omega_1^2\omega_2 - 56\omega_3 c_s^2\omega_2^3 - 240\omega_3\omega_1\omega_2^2 v_3^2 - 3\omega_3\omega_1^3\omega_2^3 - 360\omega_3 c_s^2\omega_1^3\omega_2 v_3^2 - 68\omega_3 c_s^4\omega_1\omega_2^3 - 8c_s^2\omega_1^3\omega_2 + 528\omega_3\omega_2^3 v_3^4 - 168\omega_3\omega_1^2\omega_2 v_3^2 + 8\omega_3\omega_1^3\omega_2^2 + 552\omega_3 c_s^2\omega_2^3 v_3^2 - 60\omega_3\omega_1^3 v_3^2 + 42\omega_3\omega_1^3\omega_2^3 v_3^2 - 8c_s^2\omega_1\omega_2^3 - 32\omega_3 c_s^4\omega_1^3\omega_2 + 552\omega_3\omega_1\omega_2^2 v_3^4 + 28\omega_3 c_s^4\omega_1^2\omega_2^3 + 6\omega_3 c_s^2\omega_1^3\omega_2^3 - 16\omega_3 c_s^2\omega_1^2\omega_2 + 408\omega_3\omega_1^2\omega_2^3 v_3^2 + 16\omega_3 c_s^4\omega_1^3 - 1008\omega_3 c_s^2\omega_1\omega_2^3 v_3^2 + 336\omega_3\omega_1^2\omega_2 v_3^4 - 8\omega_3 c_s^4\omega_1^2\omega_2^2 + 96\omega_3\omega_1^3 v_3^4 - 87\omega_3\omega_1^3\omega_2^3 v_3^4 + 144\omega_3 c_s^2\omega_1^3 v_3^2 - 288\omega_3\omega_2^3 v_3^2 + 252\omega_3 c_s^2\omega_1^3\omega_2^2 v_3^2 - 22\omega_3 c_s^2\omega_1^3\omega_2^2 + 16\omega_3\omega_2^3 + 336\omega_3 c_s^2\omega_1\omega_2^2 v_3^2 + 174\omega_3\omega_1^3\omega_2 v_3^2 - 44\omega_3 c_s^2\omega_1^2\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 8c_s^4\omega_1\omega_2^3 - 308\omega_3\omega_1^2\omega_2^3 v_3^2 + 42\omega_3 c_s^2\omega_1^3\omega_2 - 1068\omega_3\omega_1\omega_2^3 v_3^4 + 24c_s^2\omega_1\omega_2^3 v_3^2 + 8\omega_3 c_s^4\omega_1^2\omega_2 - 3\omega_3 c_s^4\omega_1^3\omega_2^3 + 4\omega_3\omega_1^3 - 54\omega_3 c_s^2\omega_1^3\omega_2^3 v_3^2 - 28\omega_3\omega_1\omega_2^3 + 24\omega_3 c_s^2\omega_1^2\omega_2^2 + 264\omega_3 c_s^2\omega_1^2\omega_2 v_3^2 + 310\omega_3\omega_1^3\omega_2^2 v_3^4 + 40\omega_3 c_s^4\omega_2^3 + 14\omega_3 c_s^4\omega_1^3\omega_2^2)\frac{\rho}{36\omega_3\omega_1^3\omega_2^3}$$

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